

Access DB# 127805

## SEARCH REQUEST FORM

Scientific and Technical Information Center

*Jim Lee*  
Requester's Full Name: 10/073, 223 Examiner #: 76060 Date: 7-22-04  
Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/073, 223  
Mail Box and Bldg/Room Location: 9060 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need. B

\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Polymer, resist composition & patterning processInventors (please provide full names): Nishi, Tsunehiro; Nakashima, Mutsuo;  
Tachibana, Seiichiro; Funatsu, KenjiEarliest Priority Filing Date: 2-13-02

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a polymer of claim # 13.

(2+ only needs to have those 2 repeat  
units circled)

*****		
STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: <u>K. Fuller</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>4</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>7/22/04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>20</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>30</u>	Other _____	Other (specify) _____

PTO-1590 (8-01) submit

=> FILE REG

FILE 'REGISTRY' ENTERED AT 17:34:02 ON 22 JUL 2004  
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Property values tagged with IC are from the ZIC/VINITI data file  
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STRUCTURE FILE UPDATES: 21 JUL 2004 HIGHEST RN 714195-59-2  
DICTIONARY FILE UPDATES: 21 JUL 2004 HIGHEST RN 714195-59-2

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
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<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 17:34:06 ON 22 JUL 2004  
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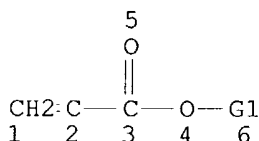
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FILE COVERS 1907 - 22 Jul 2004 VOL 141 ISS 4  
FILE LAST UPDATED: 21 Jul 2004 (20040721/ED)

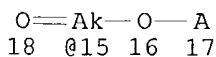
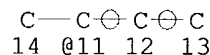
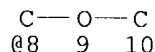
This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE

L74 SCR 2043  
L76 STR



Cy @7



*19,699 polymers from this query*

VAR G1=7/8/11/15

NODE ATTRIBUTES:

NSPEC IS R AT 11  
NSPEC IS R AT 12  
NSPEC IS R AT 13  
NSPEC IS RC AT 17  
CONNECT IS E1 RC AT 18  
DEFAULT MLEVEL IS ATOM  
GGCAT IS SAT AT 7  
DEFAULT ECLEVEL IS LIMITED

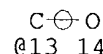
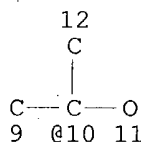
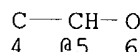
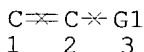
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L79 19699 SEA FILE=REGISTRY SSS FUL L76 AND L74  
L86 STR 2

*Subset search*



*Query covers Claim 13*

VAR G1=5/7/10/13

NODE ATTRIBUTES:

NSPEC IS RC AT 1  
NSPEC IS RC AT 2  
NSPEC IS RC AT 4  
NSPEC IS RC AT 9  
NSPEC IS RC AT 12  
NSPEC IS R AT 13  
NSPEC IS R AT 14  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L90 1871 SEA FILE=REGISTRY SUB=L79 SSS FUL L86  
L97 793 SEA FILE=HCAPLUS ABB=ON L90  
L98 452 SEA FILE=HCAPLUS ABB=ON L97(L)?RESIST?  
L99 365 SEA FILE=HCAPLUS ABB=ON L98(L)(PREP OR SPN OR IMF)/RL

*1,871 polymers with 1 and 2*

L100 131 SEA FILE=HCAPLUS ABB=ON L99 AND PATTERN?  
 L101 119 SEA FILE=HCAPLUS ABB=ON L100 AND PHOTORESISTS/IT  
 L102 20 SEA FILE=HCAPLUS ABB=ON L101 AND (?VINYL? OR ?ALLYL?)  
 L105 35 SEA FILE=HCAPLUS ABB=ON L101 AND ETHER?  
 L106 44 SEA FILE=HCAPLUS ABB=ON L102 OR L105

*4/4 CA references  
with utility*

=> D L106 BIB ABS HITIND HITSTR 1-44

L106 ANSWER 1 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2004:177627 HCAPLUS  
 DN 140:347367  
 TI Design and synthesis of new photoresist materials for ArF lithography  
 AU Seo, Hwang-Un; Jin, Sung-Ho; Choi, Sang-Jun; Gal, Yeong-Soon; Lim, Kwon  
 Taek  
 CS Department of Chemistry Education and Chemistry Institute for Functional  
 Materials, Pusan National University, Pusan, 609-735, S. Korea  
 SO Journal of Applied Polymer Science (2004), 92(1), 165-170  
 CODEN: JAPNAB; ISSN: 0021-8995  
 PB John Wiley & Sons, Inc.  
 DT Journal  
 LA English  
 AB A new class of photoresist matrix polymers based on **vinyl  
 ether**-maleic anhydride (VEMA) alternating copolymers was developed  
 for ArF single-layer lithog. These polymers were synthesized by copolymn.  
 of alkyl **vinyl ether** and maleic anhydride alternating  
 copolymers with acrylate derivs. containing bulky alicyclic acid-labile  
 protecting groups. The resulting polymers showed good control of  
 polymerization  
 and high transmittance. Also, these resists exhibited good adhesion to  
 the substrate, high dry-etching resistance against CF4 gas mixture (1.02  
 times the etching rate of deep-UV resist), and high selectivity to silicon  
 oxide etching. Using an ArF excimer laser exposure system with 0.6 NA,  
 120-nm L/S **patterns** were resolved under conventional  
 illumination.  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 ST vacuum UV photoresist **vinyl ether** maleic anhydride  
 alternating copolymer; argon fluoride laser lithog photoresist alternating  
 copolymer; chem amplified vacuum UV photoresist **vinyl  
 ether** maleic anhydride  
 IT Sputtering  
 (etching, reactive; dry etch resistance of **vinyl  
 ether**-maleic anhydride alternating copolymers for chemical  
 amplified vacuum-UV **photoresists**)  
 IT Polydispersity  
 (preparation and characterization of **vinyl ether**-maleic  
 anhydride alternating copolymers for chemical amplified vacuum-UV  
**photoresists**)  
 IT Polymerization  
 (radical; preparation and characterization of **vinyl ether**  
 -maleic anhydride alternating copolymers for chemical amplified vacuum-UV  
**photoresists**)  
 IT Etching  
 (sputter, reactive; dry etch resistance of **vinyl  
 ether**-maleic anhydride alternating copolymers for chemical  
 amplified vacuum-UV **photoresists**)  
 IT **Photoresists**  
 (vacuum-UV, chemical amplified; chemical amplified **photoresists** for

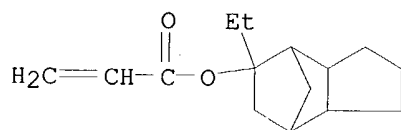
- ArF single-layer lithog. containing **vinyl ether**-maleic anhydride alternating copolymers with excellent dry etch resistance and high resolution)
- IT Adhesion, physical  
(**vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists** with excellent dry etch resistance and high resolution)
- IT 84540-57-8, Propylene glycol monomethyl **ether** acetate  
RL: NUU (Other use, unclassified); USES (Uses)  
(casting solvent; chemical amplified **photoresists** for ArF single-layer lithog. containing **vinyl ether**-maleic anhydride alternating copolymers with excellent dry etch resistance and high resolution)
- IT 75-59-2, Tetramethylammonium hydroxide  
RL: NUU (Other use, unclassified); USES (Uses)  
(developer; chemical amplified **photoresists** for ArF single-layer lithog. containing **vinyl ether**-maleic anhydride alternating copolymers with excellent dry etch resistance and high resolution)
- IT 75-73-0, Carbon tetrafluoride  
RL: NUU (Other use, unclassified); USES (Uses)  
(etching plasma; dry etch resistance of **vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists**)
- IT 66003-78-9, Triphenylsulfonium triflate 144317-44-2, Triphenylsulfonium nonaflate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photoacid generator; chemical amplified **photoresists** for ArF single-layer lithog. containing **vinyl ether**-maleic anhydride alternating copolymers with excellent dry etch resistance and high resolution)
- IT 78-67-1, AIBN  
RL: CAT (Catalyst use); USES (Uses)  
(preparation and characterization of **vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists**)
- IT 103-75-3, 3,4-Dihydro-2-ethoxy-2H-pyran 108-31-6, Maleic anhydride, reactions 110-87-2, 3,4-Dihydro-2H-pyran 307495-75-6, 8-Ethyl-8-tricyclodecanyl acrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation and characterization of **vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists**)
- IT 328061-11-6P 328061-12-7P  
RL: PRP (Properties); SPN (**Synthetic preparation**); TEM (Technical or engineered material use); PREP (**Preparation**); USES (Uses)  
(**vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists** with excellent dry etch **resistance** and high resolution)
- IT 328061-11-6P 328061-12-7P  
RL: PRP (Properties); SPN (**Synthetic preparation**); TEM (Technical or engineered material use); PREP (**Preparation**); USES (Uses)  
(**vinyl ether**-maleic anhydride alternating copolymers for chemical amplified vacuum-UV **photoresists** with excellent dry etch **resistance** and high resolution)
- RN 328061-11-6 HCAPLUS
- CN 2-Propenoic acid, 5-ethyloctahydro-4,7-methano-1H-inden-5-yl ester,

polymer with 3,4-dihydro-2H-pyran and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 307495-75-6

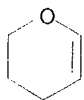
CMF C15 H22 O2



CM 2

CRN 110-87-2

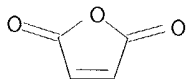
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CM 3

CRN 108-31-6

CMF C4 H2 O3



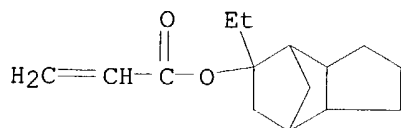
RN 328061-12-7 HCAPLUS

CN 2-Propenoic acid, 5-ethyloctahydro-4,7-methano-1H-inden-5-yl ester, polymer with 2-ethoxy-3,4-dihydro-2H-pyran and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

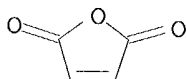
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CMF C15 H22 O2



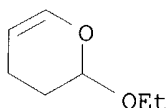
CM 2

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CMF C4 H2 O3



CM 3

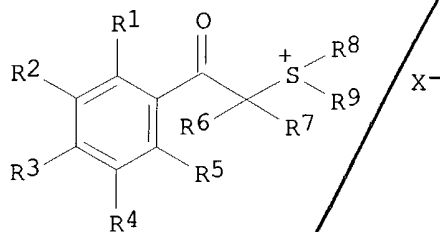
CRN 103-75-3  
CMF C7 H12 O2



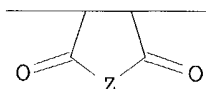
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L106 ANSWER 2 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:907515 HCAPLUS  
DN 139:401544  
TI Positive-working chemically amplification type photoresist composition  
showing improved **pattern** profile and line edge roughness  
IN Sato, Kenichiro  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 81 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003330194	A2	2003/11/19	JP 2002-138810	20020514
PRAI	JP 2002-138810		20020514		
OS	MARPAT 139:401544				
GI					



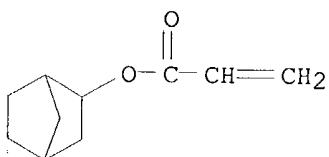
I



II

- AB The title photoresist composition, especially sensitive to a ArF excimer laser stepper, comprises (A) a photoacid generator represented by I [R1-5 = H, alkyl, alkoxy, halo; R6, R7 = H, alkyl, aryl; R8, R9 = alkyl, 2-oxoalkyl, alkoxy carbonylmethyl, **allyl**, **vinyl**; X- = sulfonic, carboxylic, sulfonylimide anion] or S+(R1)(R2)(R3).X- [R1-3 = alkyl, 2-oxoalkyl; X- = anion] and (B) an alkaline-developable resin containing structural repeating units of CH(R1):CH(OR2) [R1 = H, hydrocarbyl; R2 = hydrocarbyl], II [Z = O, NR3; R3 = H, OH, alkyl, haloalkyl, OSO2R4; R4 = alkyl, haloalkyl, cycloalkyl, camphoryl], and CH2:C(R)(AlCOOA2(Z2)1(A3R')m) [R = H, methyl; A1 = single bond, connection bond; A2 = single bond, alkylene, **ether**, ester; Z2 = alicyclic hydrocarbyl; 1 = 0, 1; A3 = single bond, alkylene, **ether**, ester; R' = CN; m = 1-3]. The photoresist composition is suitable for microphotofabrication processes.
- IC ICM G03F007-039  
ICS C08F002-50; C08F216-18; C08F220-12; C08F222-06; C08F222-40; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76
- IT Positive **photoresists**  
(pos.-working chemical amplification type photoresist composition showing improved **pattern** profile and line edge roughness)
- IT 144317-44-2 241806-75-7 258872-05-8 284474-28-8 301153-77-5  
301664-71-1 347193-29-7 414911-37-8 454471-07-9 455521-85-4  
470482-89-4 474510-73-1  
RL: CAT (Catalyst use); USES (Uses)  
(photoacid generator; pos.-working chemical amplification type photoresist composition showing improved **pattern** profile and line edge roughness)
- IT 625422-21-1P 625422-24-4P 625422-27-7P  
625422-30-2P 625422-33-5P 625422-36-8P  
625422-39-1P 625422-43-7P 625422-46-0P  
625462-07-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working chemical amplification type **photoresist** composition showing improved **pattern** profile and line edge roughness)
- IT 625422-21-1P 625422-27-7P 625422-30-2P  
625422-33-5P 625422-36-8P 625422-43-7P  
625422-46-0P 625462-07-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working chemical amplification type **photoresist** composition showing improved **pattern** profile and line edge roughness)
- RN 625422-21-1 HCAPLUS
- CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 5(or 6)-cyanobicyclo[2.2.1]hept-2-yl 2-propenoate, 2-(ethenyloxy)ethyl acetate and 2,5-furandione (9CI) (CA INDEX NAME)
- CM 1
- CRN 398152-51-7  
CMF C11 H13 N O2  
CCI IDS



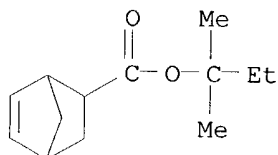


D1-CN

CM 2

CRN 398140-58-4

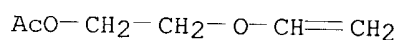
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CM 3

CRN 6026-79-5

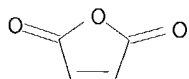
CMF C6 H10 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



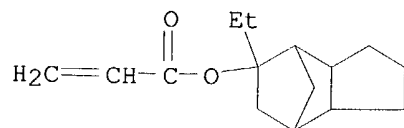
RN 625422-27-7 HCAPLUS

CN 2-Propenoic acid, 2-(2-cyanoethoxy)ethyl ester, polymer with  
3,4-dihydro-2-methoxy-2H-pyran, 5-ethyloctahydro-4,7-methano-1H-inden-5-yl  
2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 307495-75-6

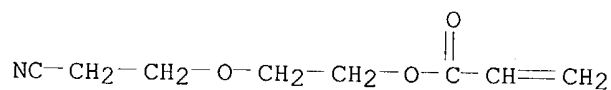
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CRN 7790-03-6

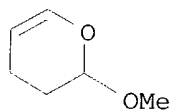
CMF C8 H11 N O3



CM 3

CRN 4454-05-1

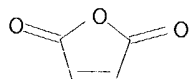
CMF C6 H10 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



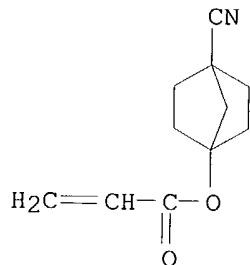
RN 625422-30-2 HCAPLUS

CN 2-Propenoic acid, 4-cyanobicyclo[2.2.1]hept-1-yl ester, polymer with 2-(ethenyloxy)-2-methylpropane, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

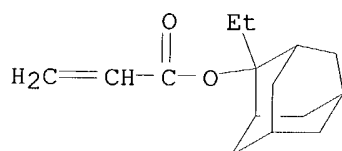
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CMF C11 H13 N O2



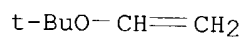
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CRN 303186-14-3  
CMF C15 H22 O2



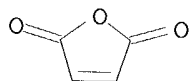
CM 3

CRN 926-02-3  
CMF C6 H12 O



CM 4

CRN 108-31-6  
CMF C4 H2 O3

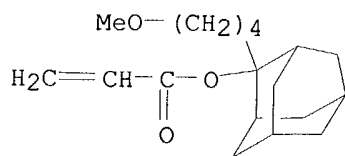


RN 625422-33-5 HCAPLUS  
CN 2-Propenoic acid, 2-cyanoethyl ester, polymer with  
(ethenyloxy)cyclohexane, 2,5-furandione and 2-(4-  
methoxybutyl)tricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX  
NAME)

CM 1

CRN 581784-05-6

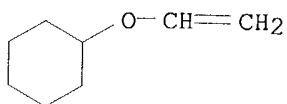
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CRN 2182-55-0

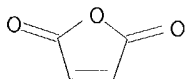
CMF C8 H14 O



CM 3

CRN 108-31-6

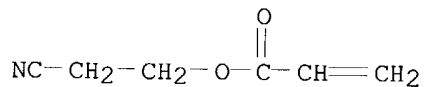
CMF C4 H2 O3



CM 4

CRN 106-71-8

CMF C6 H7 N O2



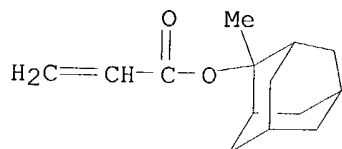
RN 625422-36-8 HCAPLUS

CN 2-Propenoic acid, 2-(2-cyanoethoxy)propyl ester, polymer with 1-(ethenyloxy)-2-methylpropane, 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

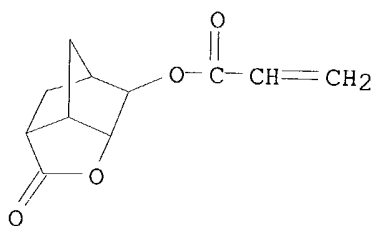
CMF C14 H20 O2



CM 2

CRN 242129-35-7

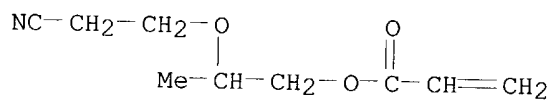
CMF C11 H12 O4



CM 3

CRN 166441-56-1

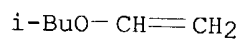
CMF C9 H13 N O3



CM 4

CRN 109-53-5

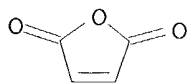
CMF C6 H12 O



CM 5

CRN 108-31-6

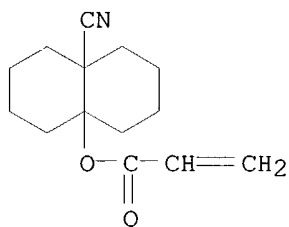
CMF C4 H2 O3



RN 625422-43-7 HCAPLUS  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1-carboxylic acid, 2-(ethenyloxy)ethyl ester,  
 polymer with 8a-cyanoctahydro-4a(2H)-naphthalenyl 2-propenoate,  
 2,5-furandione and 2-(4-methoxybutyl)tricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
 2-propenoate (9CI) (CA INDEX NAME)

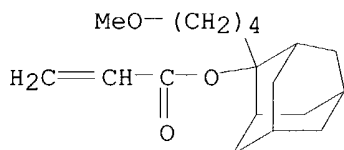
CM 1

CRN 625422-42-6  
 CMF C14 H19 N O2



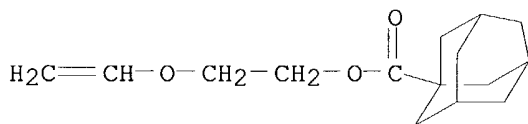
CM 2

CRN 581784-05-6  
 CMF C18 H28 O3



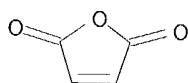
CM 3

CRN 219774-72-8  
 CMF C15 H22 O3



CM 4

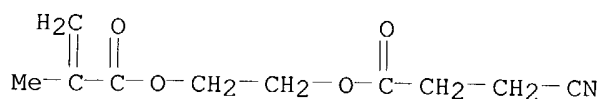
CRN 108-31-6  
 CMF C4 H2 O3



RN 625422-46-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-(3-cyano-1-oxopropoxy)ethyl ester, polymer  
 with 4',5'-dihydrospiro[bicyclo[2.2.1]hept-5-ene-2,3'(2'H)-furan]-2'-one,  
 1-(ethenyloxy)butane, 5-ethyloctahydro-4,7-methano-1H-inden-5-yl  
 2-methyl-2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

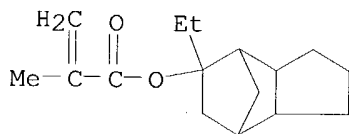
CM 1

CRN 515822-01-2  
 CMF C10 H13 N O4



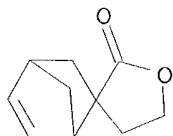
CM 2

CRN 348089-09-8  
 CMF C16 H24 O2



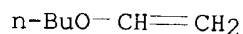
CM 3

CRN 72377-80-1  
 CMF C10 H12 O2



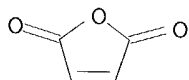
CM 4

CRN 111-34-2  
 CMF C6 H12 O



CM 5

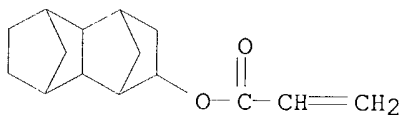
CRN 108-31-6  
CMF C4 H2 O3



RN 625462-07-9 HCAPLUS  
CN 2-Propenoic acid, 6(or 7)-cyanodecahydro-1,4:5,8-dimethanonaphthalen-2-yl ester, polymer with 1-[[2-(ethenyloxy)ethoxy]methyl]tricyclo[3.3.1.1<sup>3,7</sup>]decane, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

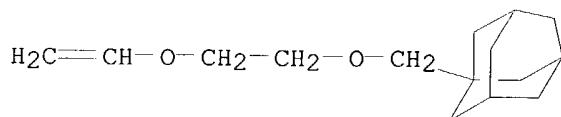
CRN 625462-06-8  
CMF C16 H19 N O2  
CCI IDS



D1-CN

CM 2

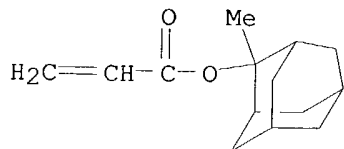
CRN 625462-05-7  
CMF C15 H24 O2



CM 3

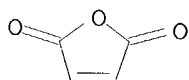
CRN 249562-06-9  
CMF C14 H20 O2





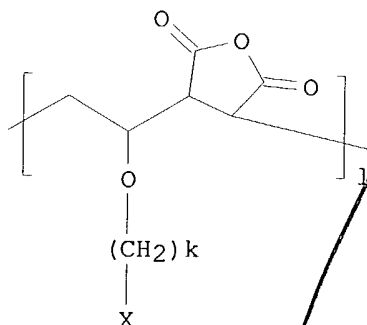
CM 4

CRN 108-31-6  
CMF C4 H2 O3



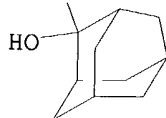
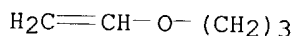
L106 ANSWER 3 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:855509 HCAPLUS  
DN 139:356051  
TI Photosensitive polymers, resist compositions comprising the same, and  
methods for forming photoresistive **patterns**  
IN Choi, Sangjun; Kim, Hyunwo; Moon, Joontae; Woo, Sanggyun  
PA S. Korea  
SO U.S. Pat. Appl. Publ., 10 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003203306	A1	20031030	US 2002-123431	20020417
	DE 10249006	A1	20031120	DE 2002-10249006	20021021
	JP 2003313249	A2	20031106	JP 2003-9484	20030117
PRAI	US 2002-123431	A	20020417		
GI					



I

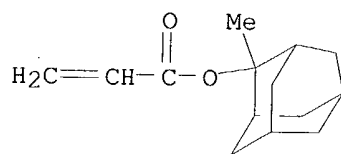
- AB A resist composition includes a photoacid generator (PAG) and a photosensitive polymer. The photosensitive polymer includes a comonomer having an acid-labile substituent group or a polar functional group, and a copolymer of alkyl **vinyl ether** and maleic anhydride. The copolymer is represented by I (k = 3-8; X = C7-20 tertiary cyclic alc.).
- IC ICM G03F007-004
- NCL 430270100; 430905000; 430910000; 430326000; 526271000; 526320000; 526321000; 526281000
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38
- IT **Photoresists**  
(photosensitive polymers for photoresist compns)
- IT 618095-95-7P 618095-97-9P **618095-98-0P** 618096-00-7P  
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(photosensitive polymers for **photoresist** compns)
- IT **618096-02-9P**  
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(photosensitive polymers for **photoresist** compns)
- IT 109-92-2, Ethyl **vinyl ether** 627-30-5,  
3-Chloropropanol 700-58-3, 2-Adamantanone 13380-94-4 618095-92-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of photosensitive polymers for photoresist compns)
- IT 26842-46-6P, 3-Chloropropyl **vinyl ether** 618095-89-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of photosensitive polymers for photoresist compns)
- IT **618095-98-0P**  
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(photosensitive polymers for **photoresist** compns)
- RN 618095-98-0 HCAPLUS
- CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2-[3-(ethenyloxy)propyl]tricyclo[3.3.1.1<sup>3,7</sup>]decan-2-ol and 2,5-furandione (9CI) (CA INDEX NAME)
- CM 1
- CRN 618095-89-9
- CMF C15 H24 O2



CM 2

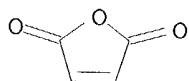
CRN 249562-06-9

CMF C14 H20 O2



CM 3

CRN 108-31-6  
CMF C4 H2 O3



IT 618096-02-9p

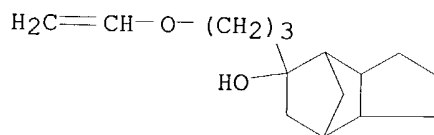
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(photosensitive polymers for **photoresist** compns)

RN 618096-02-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 5-[3-(ethenyloxy)propyl]octahydro-4,7-methano-1H-inden-5-ol and 2,5-furandione (9CI) (CA INDEX NAME)

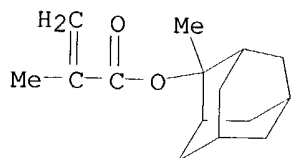
CM 1

CRN 618095-92-4  
CMF C15 H24 O2



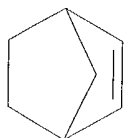
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



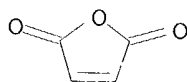
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3



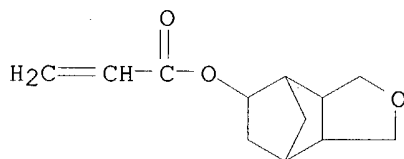
L106 ANSWER 4 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:693325 HCAPLUS  
DN 139:237692  
TI Copolymers, their manufacture, and chemical amplification-type resist compositions  
IN Momose, Akira; Wakabayashi, Shigeo; Ueda, Shoji; Fujiwara, Masayuki  
PA Mitsubishi Rayon Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003246825	A2	20030905	JP 2002-340817	20021125
PRAI	JP 2001-389720	A	20011221		

AB In the copolymers comprising  $\geq 2$  monomer units selected from monomer units having alicyclic groups, monomer units having lactone backbones, and copolymerizable **vinyl** monomer units, ratio of 3 lattices of each monomer unit is  $< 15$  mol%. The copolymers are manufactured by (1) dropping organic solvent solns. of each monomer using  $\geq 2$  dropping apps., (2) heating a part of monomers in a reactor and then dropping residual monomers into the reactor, or (3) dropping  $\geq 2$  monomer solns. having different composition ratio of monomers. The resist compns. containing the copolymers are useful for lithog. using deep-UV excimer laser light or electron beam. The copolymers show good solubility in resist solvents and prevented microgel generation in resist solns. and give resist **patterns** with good flatness of side walls.

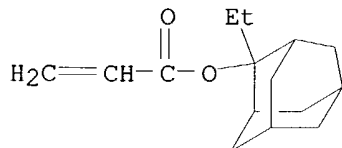
IC ICM C08F220-18

ICS C08F002-06; C08F220-28; G03F007-039  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 IT **Photoresists**  
 (deep-UV; manufacture of copolymers with good solubility in resist solvents  
 for chemical amplification-type resists)  
 IT 436852-48-1P **436852-57-2P 478548-00-4P** 591743-54-3P  
 591743-57-6P 591743-59-8P 591743-61-2P 591743-63-4P 591743-65-6P  
 RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
 material use); **PREP (Preparation)**; USES (Uses)  
 (manufacture of copolymers with good solubility in **resist** solvents for  
 chemical amplification-type **resists**)  
 IT **436852-57-2P 478548-00-4P**  
 RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
 material use); **PREP (Preparation)**; USES (Uses)  
 (manufacture of copolymers with good solubility in **resist** solvents for  
 chemical amplification-type **resists**)  
 RN 436852-57-2 HCAPLUS  
 CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with  
 dihydro-5,5-dimethyl-3-methylene-2(3H)-furanone and and octahydro-1(or  
 3)-oxo-4,7-methanoisobenzofuran-5-yl 2-propenoate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 436852-35-6  
 CMF C12 H14 O4  
 CCI IDS



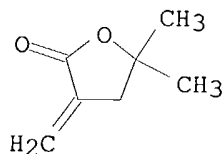
D2=O

CM 2  
 CRN 303186-14-3  
 CMF C15 H22 O2



CM 3

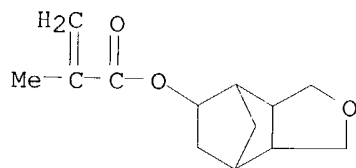
CRN 29043-97-8  
CMF C7 H10 O2



RN 478548-00-4 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with dihydro-5,5-dimethyl-3-methylene-2(3H)-furanone and octahydro-1(or 3)-oxo-4,7-methanoisobenzofuran-5-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

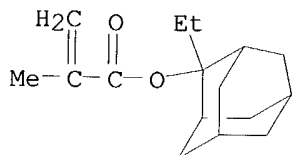
CRN 436852-34-5  
CMF C13 H16 O4  
CCI IDS



D2=O

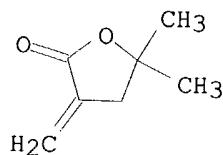
CM 2

CRN 209982-56-9  
CMF C16 H24 O2



CM 3

CRN 29043-97-8  
CMF C7 H10 O2



L106 ANSWER 5 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:376253 HCAPLUS

DN 138:393074

TI Photoresist monomers, polymers and photoresist compositions for preventing acid diffusion

IN Lee, Geun Su; Jung, Jae Chang; Shin, Ki Soo; Choi, Se Jin; Kim, Deog Bae; Kim, Jae Hyun

PA Hynix Semiconductor Inc., S. Korea

SO U.S. Pat. Appl. Publ., 19 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003091927	A1	20030515	US 2002-225992	20020822
	JP 2003176324	A2	20030624	JP 2002-243609	20020823
PRAI	KR 2001-51442	A	20010824		

AB The present invention relates to photoresist monomers, polymers, photoresist compns. for preventing acid generated in the exposed area during the course of a photolithog. process from being diffused to the unexposed area. The line edge roughness and slope **pattern** are improved when an ultrafine photoresist **pattern** is formed using photoresist copolymer having a multi-oxygen-containing compound as a repeating unit such as an ethyleneoxy moiety represented by (CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub> (n = 1-5) with at least one polymerizable carbon-carbon double bond. In addition, the shape of **pattern** is improved by eliminating top loss and the adhesion of **pattern** to the substrate is improved.

IC ICM G03F007-004

NCL 430270100; 430905000; 430910000; 430914000; 430326000; 526268000; 526281000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

IT Photolithography

#### Photoresists

(photoresist monomers, polymers and photoresist compns. for preventing acid diffusion)

IT 85-39-2, Bicyclo[2.2.1]hept-5-ene-2,3-dimethanol 107-11-9,

**Allylamine** 110-64-5, 2-Butene-1,4-diol 111-46-6, Di(ethyleneglycol), reactions 627-63-4, Fumaryl chloride 707-80-2, 3,6-Endomethylene-1,2,3,6-tetrahydrophthaloyl chloride 6707-12-6, 5-Norbornene-2,2-dimethanol 7460-82-4, Di(ethyleneglycol)di-p-tosylate 37860-51-8, Tetra(ethyleneglycol)-di-p-tosylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(photoresist monomers, polymers and photoresist compns. for preventing acid diffusion)

IT 525566-28-3P **525566-29-4P** 525566-31-8P 525566-32-9P  
525566-33-0P 525566-34-1P 525566-35-2P

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(**photoresist** monomers, polymers and **photoresist** compns. for preventing acid diffusion)

IT 525566-29-4P

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(**photoresist** monomers, polymers and **photoresist** compns. for preventing acid diffusion)

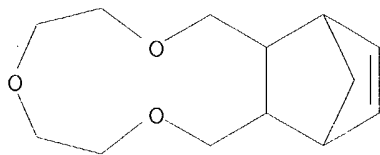
RN 525566-29-4 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 1,3,4,6,7,9,9a,10,13,13a-decahydro-10,13-methano-2,5,8-benzotrioxacycloundecin, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 525566-23-8

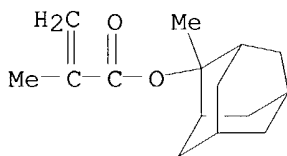
CMF C13 H20 O3



CM 2

CRN 177080-67-0

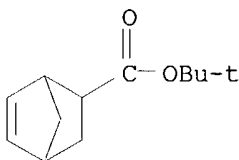
CMF C15 H22 O2



CM 3

CRN 154970-45-3

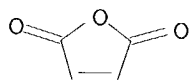
CMF C12 H18 O2





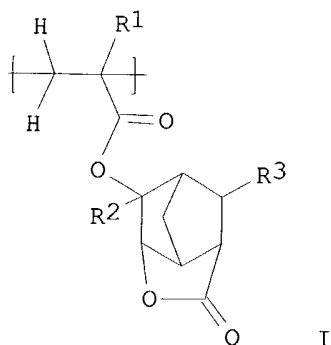
CM 4

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 6 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:355687 HCAPLUS  
DN 138:376401  
TI Polymer and resist composition for deep-UV and electron beam  
patterning process  
IN Nishi, Tsunehiro; Hasegawa, Koji; Kinsho, Takeshi  
PA Japan  
SO U.S. Pat. Appl. Publ., 29 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 1

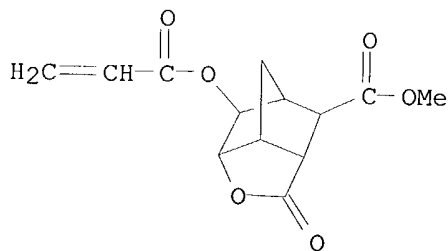
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003087183	A1	20030508	US 2002-230341	20020829
	JP 2003147023	A2	20030521	JP 2002-244664	20020826
PRAI	JP 2001-262833	A	20010831		
GI					



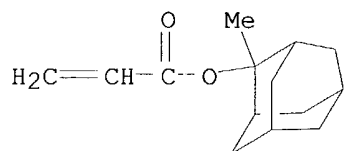
AB Disclosed is a polymer comprising recurring units of formula I (R1 = H, Me; R2 = H, C1-8-alkyl; R3 = CO2R4; R4 = C1-15-alkyl) and recurring units having a carboxylic acid protected with an acid-decomposable protecting group containing an adamantane structure or tetracyclo-[4.4.0.12,5.17,10]dodecane structure and having a Mw of 1,000-500,000. A resist composition comprising the inventive polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resolution and etching resistance and lends itself to micropatterning with electron beams or deep-UV.

IC ICM G03F007-038

ICS G03F007-38; G03F007-40  
 NCL 430270100; 430330000; 430296000; 430910000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38  
 IT **Photoresists**  
 (polymer and resist composition for deep-UV and electron beam **patterning** process)  
 IT 521950-55-0P 521950-56-1P 521950-58-3P 521950-59-4P 521950-60-7P  
 521950-62-9P 521950-63-0P 521950-64-1P 521950-65-2P  
**521950-66-3P 521950-67-4P**  
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (polymer and **resist** composition for deep-UV and electron beam **patterning** process)  
 IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 144317-44-2, Triphenylsulfonium nonafluorobutanesulfonate 211919-60-7, Trismethoxymethoxyethylamine  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymer and resist composition for deep-UV and electron beam **patterning** process)  
 IT 108-94-1, Cyclohexanone, uses 84540-57-8, Propylene glycol methyl **ether** acetate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solvent; polymer and resist composition for deep-UV and electron beam **patterning** process)  
 IT **521950-66-3P 521950-67-4P**  
 RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (polymer and **resist** composition for deep-UV and electron beam **patterning** process)  
 RN 521950-66-3 HCAPLUS  
 CN 3,5-Methano-2H-cyclopenta[b]furan-7-carboxylic acid, hexahydro-2-oxo-6-[(1-oxo-2-propenyl)oxy]-, methyl ester, polymer with 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 449759-66-4  
 CMF C13 H14 O6

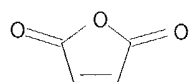


CM 2  
 CRN 249562-06-9  
 CMF C14 H20 O2



CM 3

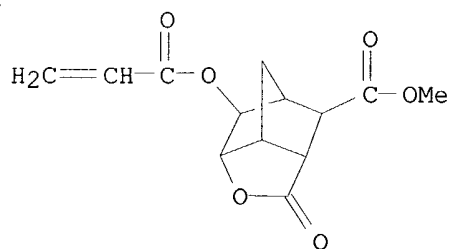
CRN 108-31-6  
CMF C4 H2 O3



RN 521950-67-4 HCAPLUS  
CN 3,5-Methano-2H-cyclopenta[b]furan-7-carboxylic acid, hexahydro-2-oxo-6-[(1-oxo-2-propenyl)oxy]-, methyl ester, polymer with 2,5-furandione, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and spiro[bicyclo[2.2.1]hept-5-ene-2,3'-(2'H)-furan]-5'-(4'H)-one (9CI) (CA INDEX NAME)

CM 1

CRN 449759-66-4  
CMF C13 H14 O6



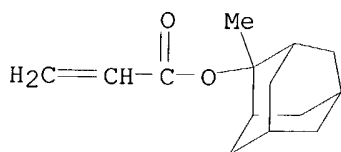
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CRN 282542-79-4  
CMF C10 H12 O2



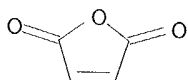
CM 3

CRN 249562-06-9  
CMF C14 H20 O2



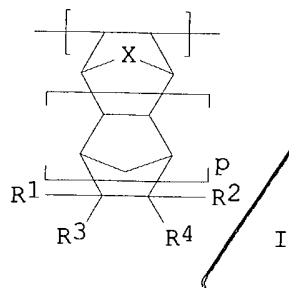
CM 4

CRN 108-31-6  
CMF C4 H2 O3

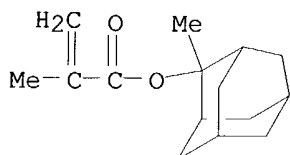


L106 ANSWER 7 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STM  
AN 2003:353741 HCAPLUS  
DN 138:376396  
TI Chemically amplified positive photoresists suppressing **pattern**  
shrinking for ArF excimer laser lithography  
IN Hashimoto, Kazuhiko; Uetani, Yasunori; Fujishima, Hiroaki; Yoshida, Isao  
PA Sumitomo Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003131381	A2	20030509	JP 2001-302904	20010928
PRAI	JP 2001-243895	A	20010810		
GI					

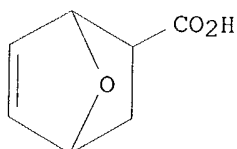


- AB The photoresists contain alkali-insol. polymers which contain unit I [X = O, S, (m)ethylene; R1, R2 = H, Cl-12 alkyl, acid-labile group; R3, R4 = H, Cl-12 alkyl, acid-labile group, R5CO2R' (R5 = direct bond, Cl-12 alkylene; R' = H, Cl-12 alkyl, acid-labile group), or alkyl-, lactone-, anhydride-, or **ether**-bearing ring; p = 0-2] and become soluble in aqueous alkalis upon acid action. The polymers, which can be prepared without metal-based catalysts, show little shrinkage upon exposure to electron beams in SEM observation.
- IC ICM G03F007-039  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST amplified photoresist SEM observation **pattern** stability;  
fluoride laser transparent amplified etching photoresist; alicyclic acrylic polymer amplified pos photoresist
- IT Positive **photoresists**  
(chemical amplified; chemical amplified pos. **photoresists** containing alicyclic group-containing polymers and causing no **pattern** shrinking in SEM observation)
- IT 521096-22-0P, exo-3,6-Epoxy-1,2,3,6-tetrahydrophthalic anhydride-2-methyl-2-adamantyl 5-norbornene-2-carboxylate copolymer  
521096-24-2P 521096-26-4P **521096-27-5P 521096-28-6P 521096-29-7P 521096-30-0P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(chemical amplified pos. **photoresists** containing alicyclic group-containing polymers and causing no **pattern** shrinking in SEM observation)
- IT **521096-27-5P 521096-28-6P 521096-29-7P 521096-30-0P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(chemical amplified pos. **photoresists** containing alicyclic group-containing polymers and causing no **pattern** shrinking in SEM observation)
- RN 521096-27-5 HCAPLUS
- CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)
- CM 1
- CRN 177080-67-0  
CMF C15 H22 O2



CM 2

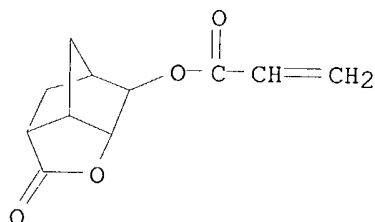
CRN 24363-23-3  
CMF C7 H8 O3



RN 521096-28-6 HCAPLUS  
CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with  
hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and  
2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA  
INDEX NAME)

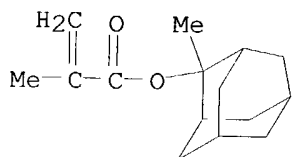
CM 1

CRN 242129-35-7  
CMF C11 H12 O4



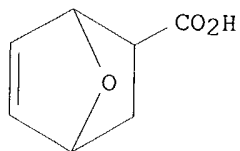
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



CM 3

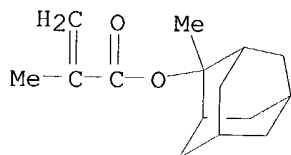
CRN 24363-23-3  
CMF C7 H8 O3



RN 521096-29-7 HCAPLUS  
 CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, methyl ester, polymer  
 with 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA  
 INDEX NAME)

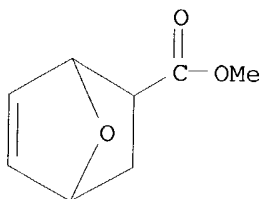
CM 1

CRN 177080-67-0  
 CMF C15 H22 O2



CM 2

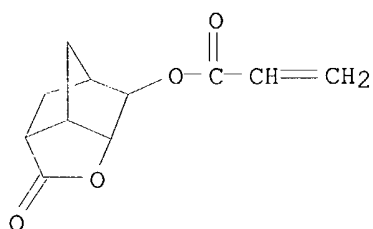
CRN 21987-33-7  
 CMF C8 H10 O3



RN 521096-30-0 HCAPLUS  
 CN 7-Oxabicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with  
 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and  
 hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate (9CI)  
 (CA INDEX NAME)

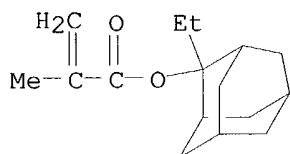
CM 1

CRN 242129-35-7  
 CMF C11 H12 O4



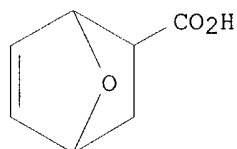
CM 2

CRN 209982-56-9  
CMF C16 H24 O2



CM 3

CRN 24363-23-3  
CMF C7 H8 O3



L106 ANSWER 8 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:317558 HCAPLUS

DN 138:346482

TI Positive chemically amplified resist compositions having high resolution and suppressed dependency of focus latitude on **pattern** density

IN Kodama, Kunihiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 46 pp.

CODEN: JKXXAF

DT Patent

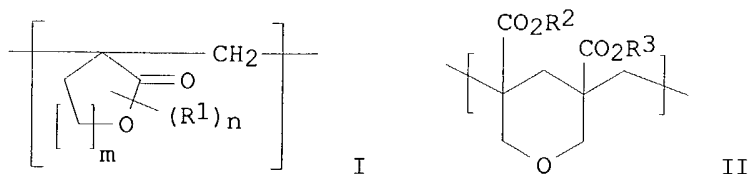
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003122012	A2	20030425	JP 2001-320380	20011018
PRAI	JP 2001-320380		20011018		
GI					

KATHLEEN FULLER PIC 1700 REMSEN 4B28 571/272-2505





- AB The compns. contain (A) compds. which generate  $C \geq 2$  F-substituted sulfonic acids by irradiation of actinic ray or radiation and (B) resins which can be decomposed with acids and increase rate of dissoln. toward alkali developers, containing  $\geq 1$  repeating units selected from I and II ( $R_1$  = alkyl, acid-decomposing group;  $m$  = 0-4 integer;  $n$  = 0-10 integer;  $R_2, R_3$  = H, alkyl, cycloalkyl, acid-releasable protection group). Preferably, A comprise sulfonium salts. Preferably, the compns. further contain F-based surfactants or silicone-based surfactants and bases which may be selected from those having structures of alkylamine, **ether** bond-containing alkylamine, HO-containing alkylamine, aniline, pyridine, diazabicyclo, ammonium hydroxide, ammonium carboxylate, and imidazole.
- IC ICM G03F007-039  
ICS C08F020-00; C08F024-00; C08K005-42; C08L033-00; C08L037-00;  
G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- IT Amines, uses  
Bases, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(acid diffusion suppresser; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT Cardo polymers  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT Sulfonium compounds  
RL: CAT (Catalyst use); USES (Uses)  
(photoacid generator; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT Positive **photoresists**  
(pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT Surfactants  
(silicones or F compds.; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT Polysiloxanes, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(surfactant; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 102-82-9, Tri-n-butylamine 484-47-9, 2,4,5-Triphenylimidazole  
1116-76-3, Tri-n-octylamine 1672-63-5 2052-49-5, Tetrabutylammonium hydroxide 3001-72-7 19293-63-1, Dicyclohexylmethylamine 19600-49-8,

- Triphenylsulfonium acetate 24544-04-5, 2,6-Diisopropylaniline  
70384-51-9  
RL: MOA (Modifier or additive use); USES (Uses)  
(acid diffusion suppresser; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 3744-08-9P, Triphenylsulfonium iodide  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate in sulfonium salt preparation, for photo acid generator; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 138529-81-4 144317-44-2 177034-80-9 181425-38-7 240424-21-9  
241806-75-7 258872-05-8 284474-28-8 301153-77-5 301153-78-6  
301525-08-6 301664-71-1 338445-31-1 365971-84-2 389859-76-1  
398141-19-0 454471-15-9 515876-83-2 515876-84-3  
RL: CAT (Catalyst use); USES (Uses)  
(photoacid generator; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 144089-15-6P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(photoacid generator; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 515876-74-1P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 115522-15-1D, polymer with acrylic/methacrylic derivs 177080-67-0D, polymer with acrylic/methacrylic derivs and lactone 195000-66-9D, polymer with acrylic/methacrylic derivs 242129-35-7D, polymer with acrylic/methacrylic derivs and lactone 279218-76-7D, polymer with acrylic/methacrylic derivs and lactone 508210-08-0 508210-22-8  
508210-29-5 508210-31-9 515876-73-0 515876-75-2 515876-76-3  
515876-77-4 515876-78-5 515876-79-6 515876-80-9 515876-81-0  
515876-82-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 96-48-0,  $\gamma$ -Butyrolactone 97-64-3, Ethyl lactate 108-94-1, Cyclohexanone, uses 1320-67-8, Propylene glycol monomethyl **ether** 7737-40-8, 2-Ethylethoxy propionate 84540-57-8, Propylene glycol monomethyl **ether** acetate  
RL: NUU (Other use, unclassified); USES (Uses)  
(solvent; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 945-51-7, Diphenyl sulfoxide 1763-23-1, Perfluoro-n-octanesulfonic acid 7605-48-3 14067-34-6, Copper benzoate 194999-85-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(sulfonium salt preparation from, for photo acid generator; pos. chemical amplified resist compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)
- IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08  
RL: MOA (Modifier or additive use); USES (Uses)  
(surfactant; pos. chemical amplified resist compns. having high resolution

and suppressed dependency of focus latitude on **pattern d.**)

IT 515876-74-1P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos. chemical amplified **resist** compns. having high resolution and suppressed dependency of focus latitude on **pattern d.**)

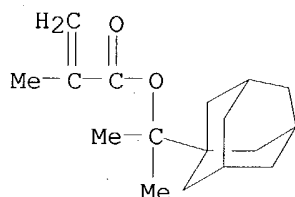
RN 515876-74-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, polymer with dihydro-5,5-dimethyl-3-methylene-2(3H)-furanone and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 279218-76-7

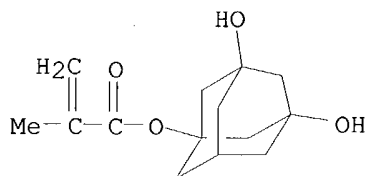
CMF C17 H26 O2



CM 2

CRN 115522-15-1

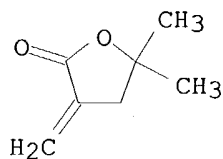
CMF C14 H20 O4



CM 3

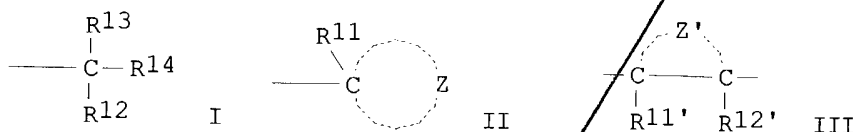
CRN 29043-97-8

CMF C7 H10 O2



L106 ANSWER 9 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:317556 HCAPLUS  
 DN 138:346480  
 TI Positive chemically amplified resist compositions having improved edge roughness of **patterns** and high sensitivity  
 IN Fujimori, Toru  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 96 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003122010	A2	20030425	JP 2001-318242	20011016
PRAI	JP 2001-318242		20011016		
GI					



AB The compns. contain (A) resins bearing alicyclic hydrocarbon groups and whose rate of dissoln. in alkali developers increase by acids, and containing  $\geq 1$  repeating units involving alicyclic hydrocarbons represented by general formulas I, CR12R13R14, CH(OR15)R16, CR19R21CR17:CR18R20, CR22R25CHR23C(O)R24, and II (R11 = Me, Et, Pr, iso-Pr, Bu, iso-Bu, sec-butyl; Z = atom. group necessary for forming alicyclic hydrocarbon group with carbon atom; R12-R16 = C1-4 alkyl, alicyclic hydrocarbyl;  $\geq 1$  of R12-R14, R15, and R16 are alicyclic hydrocarbyl; R17-R21 = H, any description given for R12-R16; R19 and/or R21 = C1-4 alkyl, alicyclic hydrocarbyl; R22-R25 = C1-4 alkyl, alicyclic hydrocarbyl;  $\geq 1$  of R22-R25 are alicyclic hydrocarbyl; R23 and R24 may be bonded together and form ring) and repeating units represented by general formula III [R11', R12' = H, cyano, halo, (substituted) alkyl; Z' = atom. group involving bonded 2 carbon atom (C-C) for forming (substituted) alicyclic structure], (B) compds. generating acids by actinic light or radiation, and (C) compds. which accelerates dissoln. rate of films toward alkali developers. Preferably, the general formula III may be norbornene derivs. Preferably, the compds. (C) are selected from carboxylic acids, alcs., sulfonamides, nitriles, malonic acid derivs., and malonic acid esters. Preferably, the compns. further contain (D) mixed solvents composed of HO-containing solvents and HO-free solvents. The compns. are suitable for exposure to deep UV of wavelength  $\leq 200$  nm, especially for ArF excimer laser light.

IC ICM G03F007-039  
 ICS C08F220-18; C08F232-00; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38

IT Positive **photoresists**  
 (pos. chemical amplified resist compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)

IT 77-95-2 99-66-1 110-59-8, Pentanenitrile 110-61-2, Butanedinitrile 112-92-5, 1-Octadecanol 141-82-2, Propanedioic acid, uses 143-08-8, 1-Nonanol 453-20-3 505-52-2, Tridecanedioic acid 506-12-7, Heptadecanoic acid 516-05-2 534-59-8 589-55-9, 4-Heptanol 601-75-2 608-39-9 609-02-9 609-08-5 629-60-7, Tridecanenitrile 646-30-0, Nonadecanoic acid 765-04-8, 1,11-Undecanediol 828-51-3 1619-62-1 1871-96-1, Decanedinitrile 2243-27-8, Nonanenitrile 3144-04-5, 1-Butanesulfonamide 3586-55-8 4172-97-8 4250-38-8, Nonacosanoic acid 4352-58-3 5422-52-6 6006-37-7, Tridecanedinitrile 10044-27-6 10347-88-3 13706-71-3 14631-44-8 17854-63-6 19758-33-9 20654-46-0 21101-88-2 27132-23-6 30893-24-4 36976-70-2 39269-10-8 41890-52-2 54321-41-4 59086-77-0 62472-38-2 65501-71-5, 1-Octanesulfonamide 67796-27-4 71420-37-6 90220-86-3, 1,2,3,4-Butanetetra carbonitrile 101084-14-4 104319-35-9 135290-24-3 219925-61-8, 2,2-Butanediol 514848-21-6 514848-22-7 514848-23-8 514848-24-9, 1,2,3,5-Cyclohexanetetra carbonitrile 514848-25-0 514848-27-2 514848-28-3

RL: MOA (Modifier or additive use); USES (Uses)  
(dissoln. accelerator; pos. chemical amplified resist compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)

IT 144317-44-2 160481-39-0 227199-92-0 241806-75-7 258872-05-8  
301153-77-5 301153-78-6 301664-71-1 391232-40-9 398141-17-8  
398141-18-9 414911-33-4

RL: CAT (Catalyst use); USES (Uses)  
(photoacid generator; pos. chemical amplified resist compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)

IT 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer 391232-36-3P 398140-57-3P **398140-88-0P**

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(pos. chemical amplified **resist** compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)

IT 288303-55-9 364736-22-1 391613-77-7 398140-36-8 398140-38-0  
398140-40-4 398140-43-7 398140-45-9 398140-47-1 398140-48-2  
398140-50-6 398140-52-8 398140-54-0 398140-55-1 398140-59-5  
398140-60-8 398140-62-0 398140-64-2 398140-65-3 398140-68-6  
398140-69-7 398140-71-1 398140-72-2 398140-73-3 398140-76-6  
398140-77-7 398140-78-8 398140-79-9 398140-80-2 398140-82-4  
398140-84-6 398140-87-9 398140-89-1 398140-90-4 398140-91-5  
398140-92-6 398140-93-7 398140-94-8 398140-95-9 398140-97-1  
398140-98-2 398140-99-3 398141-00-9 398141-04-3 398141-06-5  
398141-07-6 398141-08-7 398141-10-1 398141-11-2 398141-14-5  
398141-16-7 398152-52-8 405509-18-4 405509-20-8 405509-21-9  
405509-22-0 405509-29-7 406722-63-2 514848-13-6 514848-14-7  
514848-15-8 514848-16-9 514848-17-0 514848-19-2 514848-20-5

RL: TEM (Technical or engineered material use); USES (Uses)  
(pos. chemical amplified resist compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)

IT 96-48-0,  $\gamma$ -Butyrolactone 97-64-3, Ethyl lactate 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 1320-67-8, Propylene glycol methyl **ether** 14272-48-1 84540-57-8, Propylene glycol monomethyl **ether** acetate

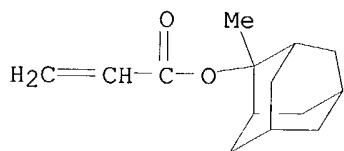
RL: NUU (Other use, unclassified); USES (Uses)  
(solvent; pos. chemical amplified resist compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and

high sensitivity)  
 IT **398140-88-0P**  
 RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (pos. chemical amplified **resist** compns. containing cycloolefin polymers and having improved edge roughness of **patterns** and high sensitivity)  
 RN 398140-88-0 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

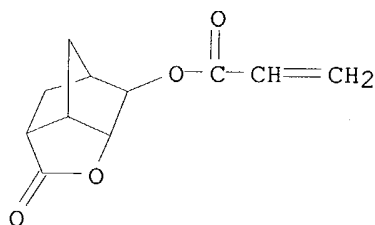
CMF C14 H20 O2



CM 2

CRN 242129-35-7

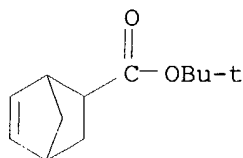
CMF C11 H12 O4



CM 3

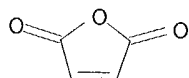
CRN 154970-45-3

CMF C12 H18 O2



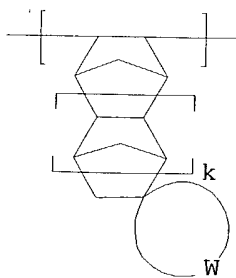
CM 4

CRN 108-31-6  
CMF C4 H2 O3

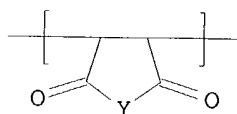


L106 ANSWER 10 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:900858 HCAPLUS  
DN 138:9650  
TI Norbornene polymers, resist materials, and **pattern** formation  
IN Nishi, Tsunehiro; Kobayashi, Tomohiro  
PA Shin-Etsu Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 36 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002338633	A2	20021127	JP 2001-150535	20010521
	US 2003087181	A1	20030508	US 2002-150083	20020520
PRAI	JP 2001-150535	A	20010521		
GI					



I



II

AB The polymers with weight-average mol. weight 1000-500,000 have (A) norbornene-based repeating units I and carbonyl-containing cyclic repeating units II (W = C2-15 divalent group, 5- or 6-membered cyclic **ether**, cyclic ketone, lactone, cyclic carbonate, acid anhydride, or imide; Y = O, NR1; R1 = C1-15 normal, branched, or cyclic alkyl; k = 0, 1) and (B)  $\geq 1$  units generating carboxylic acids by decomposition under acidic conditions. **Patterns** are formed by (1) applying resist materials containing the polymers on substrates, (2) heating, (3) exposing to high-energy beam or electron beam via photomasks, (4) heating optionally, and (5) developing. The resist materials show high resolution and low dependence of

**pattern** d. in exposure by ArF excimer lasers.

IC ICM C08F222-06  
ICS C08F220-10; C08F222-10; C08F222-40; C08F232-08; G03F007-039;  
H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38, 76

ST norbornene polymer photoresist **pattern** formation; maleic  
anhydride norbornene polymer photoresist **pattern** formation

IT Electronic device fabrication  
**Photoresists**  
(high-resolution **photoresists** containing norbornene polymers for  
**pattern** formation)

IT 476628-84-9P 476628-85-0P 476628-86-1P 476628-88-3P 476628-89-4P  
476628-90-7P 476628-91-8P 476628-92-9P 476628-93-0P 476628-94-1P  
476628-95-2P 476628-96-3P **476628-97-4P 476628-98-5P**  
**476628-99-6P 476629-00-2P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
material use); **PREP (Preparation)**; USES (Uses)  
(high-resolution **photoresists** containing norbornene polymers for  
**pattern** formation)

IT **476628-97-4P 476628-98-5P 476628-99-6P**  
**476629-00-2P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
material use); **PREP (Preparation)**; USES (Uses)  
(high-resolution **photoresists** containing norbornene polymers for  
**pattern** formation)

RN 476628-97-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
polymer with 2,5-furandione and spiro[bicyclo[2.2.1]hept-5-ene-2,3'(2'H)-  
furan]-5'(4'H)-one (9CI) (CA INDEX NAME)

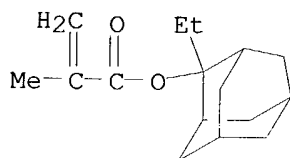
CM 1

CRN 282542-79-4  
CMF C10 H12 O2



CM 2

CRN 209982-56-9  
CMF C16 H24 O2

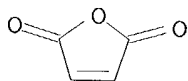




CM 3

CRN 108-31-6

CMF C4 H2 O3



RN 476628-98-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and spiro[bicyclo[2.2.1]hept-5-ene-2,3'-(2'H)-furan]-5'-(4'H)-one (9CI) (CA INDEX NAME)

CM 1

CRN 282542-79-4

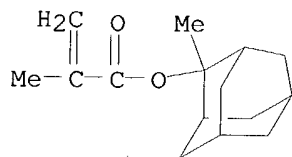
CMF C10 H12 O2



CM 2

CRN 177080-67-0

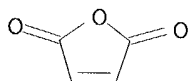
CMF C15 H22 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



RN 476628-99-6 HCAPLUS

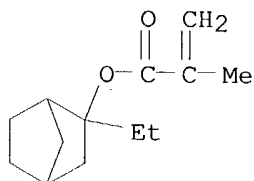
CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,5-furandione and spiro[bicyclo[2.2.1]hept-5-ene-2,3'-(2'H)-furan]-

5' (4'H)-one (9CI) (CA INDEX NAME)

CM 1

CRN 330595-98-7

CMF C13 H20 O2



CM 2

CRN 282542-79-4

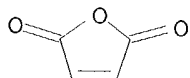
CMF C10 H12 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



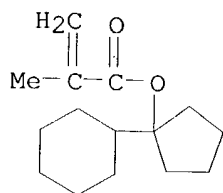
RN 476629-00-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-cyclohexylcyclopentyl ester, polymer with 2,5-furandione and spiro[bicyclo[2.2.1]hept-5-ene-2,3' (2'H)-furan]-5' (4'H)-one (9CI) (CA INDEX NAME)

CM 1

CRN 366808-98-2

CMF C15 H24 O2



CM 2

CRN 282542-79-4

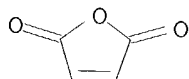
CMF C10 H12 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 11 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:808027 HCAPLUS

DN 137:317938

TI Photosensitive monomers with acid-decomposable protective group-containing lactone groups, photosensitive polymers, and chemical amplified photoresist compositions

IN Yoon, Whang Sup; Woo, Sang Kyun

PA Samsung Electronics Co., Ltd., S. Korea

SO Jpn. Kokai Tokkyo Koho, 21 pp.

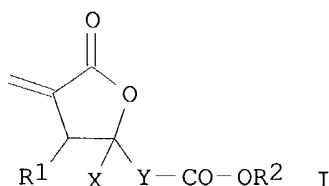
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002308937	A2	20021023	JP 2002-46652	20020222
	US 2002155379	A1	20021024	US 2002-77856	20020220
	US 6696217	B2	20040224		
PRAI	KR 2001-9001	A	20010222		
OS	MARPAT 137:317938				
GI					



- AB Title monomers are methylene butyrolactone derivs. represented by the general formula I, where R1 = H or alkyl, R2 = acid-decomposable group, X = H or (substituted) C1-10 alkyl, and Y = (substituted) C1-20 alkylene or alicyclic hydrocarbon. Thus, 2-methyl-2-adamantanol and 4-chlorobutyryl chloride were reacted to give 2-methyl-2-adamantyl 4-chloro-1-butanoate, which was reacted with KCN and further Et 2-bromomethylacrylate to give I (R1 = H, R2 = 2-methyl-2-adamantyl, X = H, Y = C3H6). A photoresist composition comprising I homopolymer, triphenylsulfonium trifluoromethanesulfonate, triisodecylamine, and propylene glycol Me ether acetate was applied on a Si wafer with antireflective coating layer, irradiated with ArF excimer laser light, and developed with an tetramethylammonium hydroxide aqueous solution to give a resist pattern.
- IC ICM C08F024-00  
ICS C07D307-58; C07D307-94; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35
- IT **Photoresists**  
(preparation of photosensitive monomers with acid-decomposable protective group-containing lactone groups and their polymers for chemical amplified photoresists)
- IT Cardo polymers  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of photosensitive monomers with acid-decomposable protective group-containing lactone groups and their polymers for chemical amplified photoresists)
- IT 473242-46-5P 473242-47-6P 473242-62-5P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate in monomer preparation; preparation of photosensitive monomers with acid-decomposable protective group-containing lactone groups and their polymers for chemical amplified photoresists)
- IT 473242-48-7P 473242-49-8P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; preparation of photosensitive monomers with acid-decomposable protective group-containing lactone groups and their polymers for chemical amplified photoresists)
- IT 473242-51-2P **473242-53-4P** 473242-55-6P **473242-58-9P**  
473242-59-0P 473242-60-3P **473242-61-4P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(preparation of photosensitive monomers with acid-decomposable protective group-containing lactone groups and their polymers for chemical amplified photoresists)
- IT 151-50-8, Potassium cyanide 702-98-7, 2-Methyl-2-adamantanol 1694-31-1

4635-59-0, 4-Chlorobutyryl chloride 17435-72-2, Ethyl  
2-bromomethylacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant in monomer preparation; preparation of photosensitive monomers  
with

acid-decomposable protective group-containing lactone groups and their  
polymers for chemical amplified **photoresists**)

IT **473242-53-4P 473242-58-9P 473242-61-4P**

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
material use); **PREP (Preparation)**; USES (Uses)

(preparation of photosensitive monomers with acid-decomposable protective  
group-containing lactone groups and their polymers for chemical amplified  
**photoresists**)

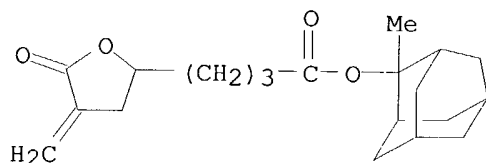
RN 473242-53-4 HCAPLUS

CN 2-Furanbutanoic acid, tetrahydro-4-methylene-5-oxo-, 2-  
methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with  
2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

CRN 473242-48-7

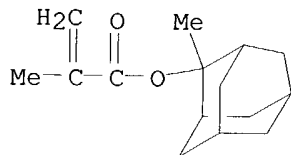
CMF C20 H28 O4



CM 2

CRN 177080-67-0

CMF C15 H22 O2



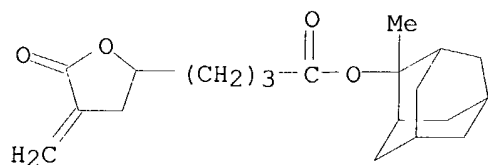
RN 473242-58-9 HCAPLUS

CN 2-Furanbutanoic acid, tetrahydro-4-methylene-5-oxo-, 2-  
methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and  
2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

CRN 473242-48-7

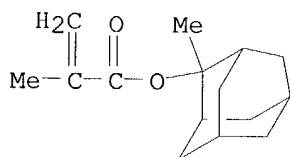
CMF C20 H28 O4



CM 2

CRN 177080-67-0

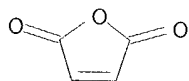
CMF C15 H22 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



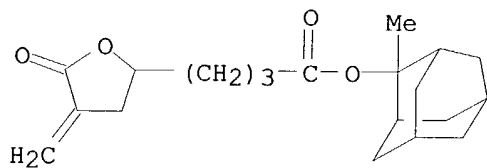
RN 473242-61-4 HCAPLUS

CN 2-Furanbutanoic acid, tetrahydro-4-methylene-5-oxo-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

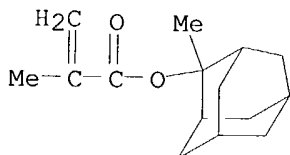
CRN 473242-48-7

CMF C20 H28 O4



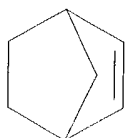
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



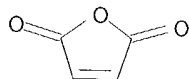
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 12 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:807323 HCAPLUS

DN 137:317934

TI Alicyclic **ether** compounds, their polymers and DUV and EB resist materials, and their **pattern** formation

IN Tachibana, Seiichiro; Nakajima, Atsuo; Nishi, Tsunehiro

PA Shin-Etsu Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002308938	A2	20021023	JP 2002-5779	20020115
	US 2002161150	A1	20021031	US 2002-46264	20020116
	US 6624335	B2	20030923		
	US 2004013973	A1	20040122	US 2003-611853	20030703
PRAI	JP 2001-8988	A	20010117		

US 2002-46264 A3 20020116

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB The **ether** compds. are represented by the general formula I (R1 = H, C1-6 linear, branched, or cyclic alkyl; R2 = C1-6 linear, branched, or cyclic alkyl; R3 = H, C1-15 acyl, alkoxycarbonyl whose H are partially or completely substituted with halogens; k = 0, 1, m = 0-3 integer; n = 3-6 integer). The polymers have weight-average mol. weight 1000-500,000 and contain repeating units derived from I and represented by the general formula II or III (k, m, n, R1-R3 = same as above). The resist materials containing the polymers are applied on substrates, heated, exposed to high-energy rays or electron beams via photomasks, post-baked as required, and developed with developers. The resist materials have good performance in resolution, depth-of-focus (DOF), and post exposure delay (PED) stability. The resist materials are especially useful for  $\leq 0.3\text{-}\mu\text{m}$  microlithog. using KrF or ArF excimer laser lights and give vertical **patterns** with good profiles.
- IC ICM C08F032-04  
ICS C07C043-178; C07C069-16; C08G061-08; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 24, 37, 38
- ST norbornene **ether** polymer deep UV resist; chem amplified pos photoresist norbornene **ether**; alicyclic **ether** polymer DUV resist pos; cycloolefin **ether** polymer DUV resist pos
- IT Positive **photoresists**  
(UV, DUV; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT Electron beam resists  
(pos.-working; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 102-71-6, Triethanolamine, uses 102-82-9, Tributylamine 211919-60-7, Tris(methoxymethoxyethyl)amine 218770-96-8, Tris(methoxyethoxymethoxyethyl)amine  
RL: NUU (Other use, unclassified); USES (Uses)  
(base; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 81-25-4 828-51-3  
RL: MOA (Modifier or additive use); USES (Uses)  
(for improvement of post exposure delay stability; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 471910-87-9P 471910-89-1P 471910-91-5P 471911-10-1P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 471910-88-0P 471910-90-4P 471910-92-6P 471910-94-8P 471910-96-0P  
471910-97-1P 471910-98-2P 471910-99-3P 471911-00-9P 471911-01-0P  
**471911-02-1P 471911-03-2P 471911-05-4P**  
471911-07-6P 471911-09-8P  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

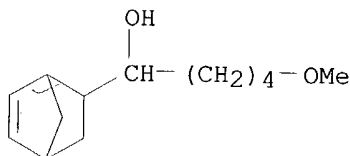


- (norbornene **ether** compds., their polymers and pos. DUV and EB **resist** materials, and their **patterning**)
- IT 66003-78-9, Triphenylsulfonium triflate 144317-44-2, Triphenylsulfonium nonaflate  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoacid generator; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 122752-67-4 308141-03-9 308141-06-2 471911-11-2  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (regulator for acid dissoln.; norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 5063-03-6, 5-Acetyl-2-norbornene 5453-80-5, 5-Norbornene-2-carbaldehyde 17913-18-7, 1-Chloro-4-methoxybutane 80376-88-1, (5-Norbornene-2-yl)acetaldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting materials; for norbornene **ether** compds., their polymers and pos. DUV and EB resist materials, and their **patterning**)
- IT 471911-02-1P 471911-03-2P 471911-05-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (norbornene **ether** compds., their polymers and pos. DUV and EB **resist** materials, and their **patterning**)
- RN 471911-02-1 HCAPLUS  
 CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and  $\alpha$ -(4-methoxybutyl)bicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

CM 1

CRN 471910-87-9

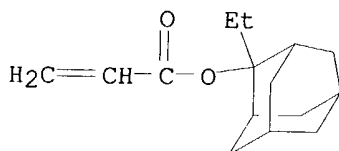
CMF C13 H22 O2



CM 2

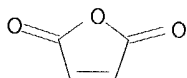
CRN 303186-14-3

CMF C15 H22 O2



CM 3

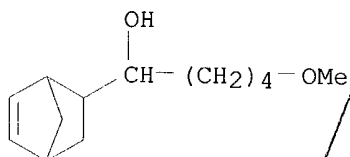
CRN 108-31-6  
CMF C4 H2 O3



RN 471911-03-2 HCAPLUS  
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and  $\alpha$ -(4-methoxybutyl)bicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

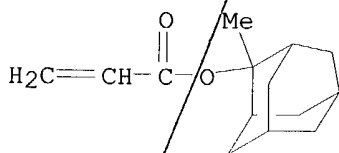
CM 1

CRN 471910-87-9  
CMF C13 H22 O2



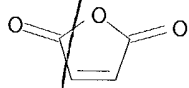
CM 2

CRN 249562-06-9  
CMF C14 H20 O2



CM 3

CRN 108-31-6  
CMF C4 H2 O3



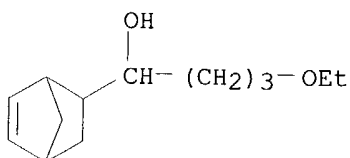
RN 471911-05-4 HCAPLUS

CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with  $\alpha$ -(3-ethoxypropyl)bicyclo[2.2.1]hept-5-ene-2-methanol and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 471911-04-3

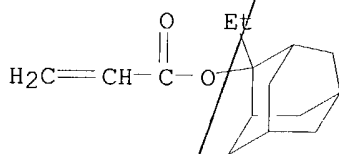
CMF C13 H22 O2



CM 2

CRN 303186-14-3

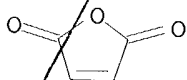
CMF C15 H22 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 13 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:794185 HCAPLUS

DN 137:317926

TI Polymer, resist composition and **patterning** process

IN Nishi, Tsunehiro; Nakashima, Mutsuo; Tachibana, Seichiro; Funatsu, Kenji

PA Shin-Etsu Chemical Co., Ltd., Japan

SO U.S. Pat. Appl. Publ., 38 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI US 2002150835 A1 20021017 ~~US 2002-73223~~ 20020213  
 JP 2002317016 A2 20021031 ~~JP 2002-21562~~ 20020130

PRAI JP 2001-37247 A 20010214  
 JP 2001-37262 A 20010214  
 JP 2001-37271 A 20010214

AB A novel polymer is obtained by copolymerizing a (meth)acrylic acid derivative with a **vinyl ether** compound, an **allyl ether** compound and an oxygen-containing alicyclic olefin compound. A photoresist composition comprising the polymer as a base resin is sensitive to high-energy radiation, has excellent sensitivity, resolution, etching resistance, and minimized swell and lends itself to micropatterning with electron beams or deep-UV.

IC ICM G03F007-038  
 ICS G03F007-20; G03F007-38; G03F007-40; G03F007-30

NCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 35, 38

IT **Photoresists**  
 (polymer for photoresist composition and **patterning** process)

IT Photolithography  
 (vacuum UV; polymer for photoresist composition and **patterning** process)

IT 470722-46-4P 470722-47-5P 470722-48-6P 470722-49-7P 470722-50-0P  
 470722-51-1P 470722-52-2P 470722-53-3P 470722-54-4P 470722-55-5P  
 470722-56-6P 470722-57-7P **470722-59-9P 470722-60-2P**  
**470722-62-4P 470722-64-6P 470722-65-7P**  
**470722-66-8P 470722-67-9P 470722-68-0P**  
 470722-69-1P 470722-70-4P 470722-71-5P  
**470722-72-6P 470722-73-7P 470722-74-8P**  
**470722-75-9P 470722-76-0P**  
 RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)  
 (polymer for **photoresist** composition and **patterning** process)

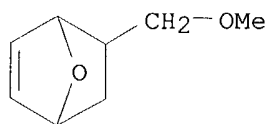
IT **470722-59-9P 470722-60-2P 470722-62-4P**  
**470722-64-6P 470722-65-7P 470722-66-8P**  
**470722-67-9P 470722-68-0P 470722-70-4P**  
**470722-71-5P 470722-72-6P 470722-73-7P**  
**470722-74-8P 470722-75-9P 470722-76-0P**  
 RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)  
 (polymer for **photoresist** composition and **patterning** process)

RN 470722-59-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

CM 1

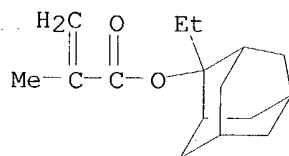
CRN 470722-58-8  
 CMF C8 H12 O2



CM 2

CRN 209982-56-9

CMF C16 H24 O2



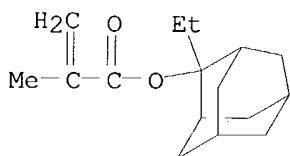
RN 470722-60-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 7-oxabicyclo[2.2.1]hept-5-ene-2-methanol (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9

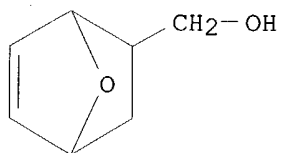
CMF C16 H24 O2



CM 2

CRN 89898-05-5

CMF C7 H10 O2



RN 470722-62-4 HCAPLUS

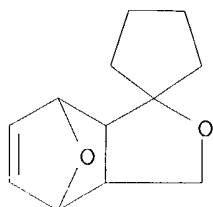
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,

polymer with 3'a,4',7',7'a-tetrahydrospiro[cyclopentane-1,1'(3'H)-  
[4,7]epoxyisobenzofuran] (9CI) (CA INDEX NAME)

CM 1

CRN 470722-61-3

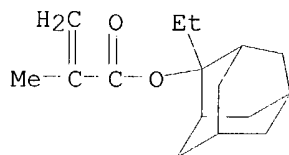
CMF C12 H16 O2



CM 2

CRN 209982-56-9

CMF C16 H24 O2



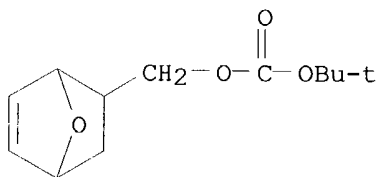
RN 470722-64-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1.3,7]dec-2-yl ester,  
polymer with 1,1-dimethylethyl 7-oxabicyclo[2.2.1]hept-5-en-2-ylmethyl  
carbonate (9CI) (CA INDEX NAME)

CM 1

CRN 470722-63-5

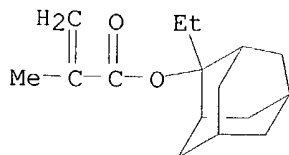
CMF C12 H18 O4



CM 2

CRN 209982-56-9

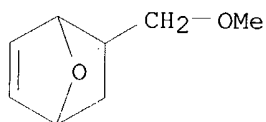
CMF C16 H24 O2



RN 470722-65-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

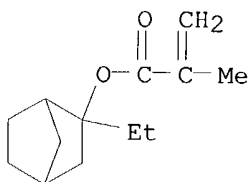
CM 1

CRN 470722-58-8  
 CMF C8 H12 O2



CM 2

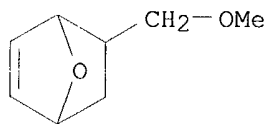
CRN 330595-98-7  
 CMF C13 H20 O2



RN 470722-66-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-cyclohexylcyclopentyl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

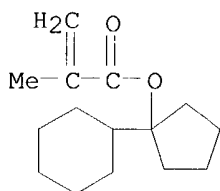
CM 1

CRN 470722-58-8  
 CMF C8 H12 O2



CM 2

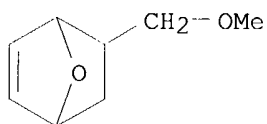
CRN 366808-98-2  
CMF C15 H24 O2



RN 470722-67-9 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate and 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)

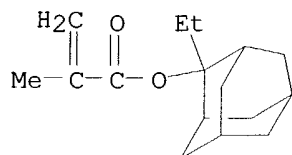
CM 1

CRN 470722-58-8  
CMF C8 H12 O2



CM 2

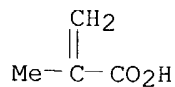
CRN 209982-56-9  
CMF C16 H24 O2



CM 3



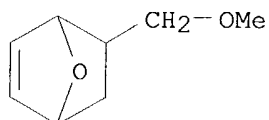
CRN 79-41-4  
CMF C4 H6 O2



RN 470722-68-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 5-(methoxymethyl)-7-oxabicyclo[2.2.1]hept-2-ene and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

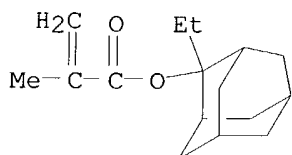
CM 1

CRN 470722-58-8  
CMF C8 H12 O2



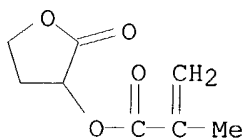
CM 2

CRN 209982-56-9  
CMF C16 H24 O2



CM 3

CRN 195000-66-9  
CMF C8 H10 O4



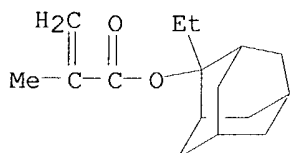
RN 470722-70-4 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,

polymer with 2-ethenyl-1,3-dioxolane (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9

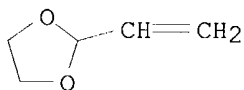
CMF C16 H24 O2



CM 2

CRN 3984-22-3

CMF C5 H8 O2



*because parts of the  
structure in claim 13  
can be in a ring  
monomers like this are  
retrieved*

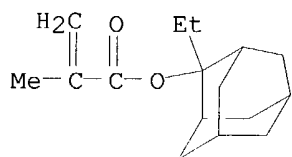
RN 470722-71-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1.3,7]dec-2-yl ester,  
polymer with 2-propenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9

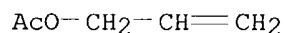
CMF C16 H24 O2



CM 2

CRN 591-87-7

CMF C5 H8 O2

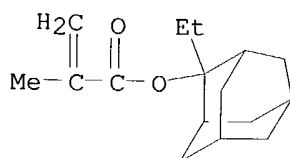


RN 470722-72-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1.3,7]dec-2-yl ester,  
polymer with 2,5-dihydrofuran (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9  
CMF C16 H24 O2



CM 2

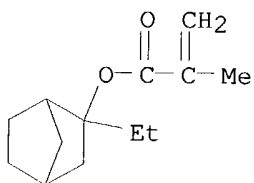
CRN 1708-29-8  
CMF C4 H6 O



RN 470722-73-7 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2-ethenyl-1,3-dioxolane (9CI) (CA INDEX NAME)

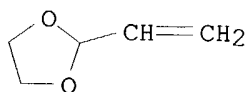
CM 1

CRN 330595-98-7  
CMF C13 H20 O2



CM 2

CRN 3984-22-3  
CMF C5 H8 O2

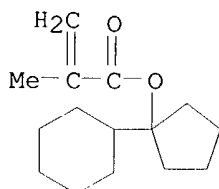


RN 470722-74-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-cyclohexylcyclopentyl ester, polymer with 2-ethenyl-1,3-dioxolane (9CI) (CA INDEX NAME)

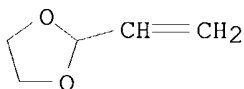
CM 1

CRN 366808-98-2  
CMF C15 H24 O2



CM 2

CRN 3984-22-3  
CMF C5 H8 O2

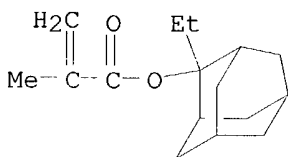


RN 470722-75-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 2-ethenyl-1,3-dioxolane and 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

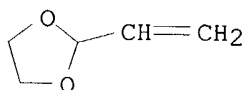
CM 1

CRN 209982-56-9  
CMF C16 H24 O2



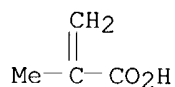
CM 2

CRN 3984-22-3  
CMF C5 H8 O2



CM 3

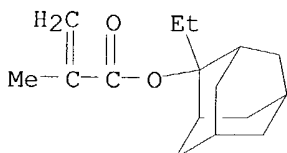
CRN 79-41-4  
CMF C4 H6 O2



RN 470722-76-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
polymer with 2-ethenyl-1,3-dioxolane and tetrahydro-2-oxo-3-furanyl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

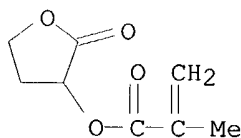
CM 1

CRN 209982-56-9  
CMF C16 H24 O2



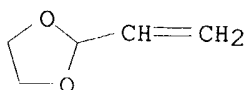
CM 2

CRN 195000-66-9  
CMF C8 H10 O4



CM 3

CRN 3984-22-3  
CMF C5 H8 O2



L106 ANSWER 14 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:792710 HCAPLUS  
 DN 137:317922  
 TI Positive photoresist compositions offering sharp **patterns**  
 IN Sato, Kenichiro  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 85 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002303984	A2	20021018	JP 2001-135245	20010502
PRAI	JP 2001-22010	A	20010130		
OS	MARPAT 137:317922				
AB	The pos. photoresist compns. which give fine <b>patterns</b> with good profile, smoother line edges, and no top profile erosion for ArF excimer laser lithog. contain (A) resins which have alicyclic hydrocarbon groups and increase solubility speed to alkali developers by acids, (B) compds. which generate acids by actinic light or radiation, and (C) acetals shown as R101OCHMeOR102 or R102OCHMeOR102 (R101, R102 = alkyl which may have linear, branched, or cyclic substituents).				
IC	ICM G03F007-039 ICS C08K005-00; C08K005-06; C08L101-02; G03F007-004; H01L021-027; C07C025-02; C07C043-303; C07C043-305; C07C307-02; C07C309-06; C07C317-28; C07C381-12				
CC	74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
IT	Positive <b>photoresists</b> (pos. photoresist compns. offering sharp <b>patterns</b> )				
IT	1886-74-4	66003-78-9	69842-77-9	116808-67-4	133710-62-0
	138529-81-4	145612-66-4	171417-91-7	177786-96-8	220155-94-2
	241806-75-7	258341-99-0	258342-00-6	258872-05-8	260061-58-3
	284474-28-8	301525-08-6	307531-76-6	312386-77-9	391232-40-9
RL:	CAT (Catalyst use); USES (Uses) (photoacid generator; pos. photoresist compns. offering sharp <b>patterns</b> )				
IT	250378-10-0P	288303-55-9P	364736-22-1P	391232-36-3P	
	<b>391613-77-7P</b>	398140-36-8P	398140-40-4P	398140-43-7P	
	398140-45-9P	398140-47-1P	398140-48-2P	398140-50-6P	398140-52-8P
	398140-55-1P	398140-57-3P	398140-59-5P	398140-60-8P	398140-62-0P
	398140-64-2P	398140-65-3P	398140-68-6P	398140-69-7P	398140-71-1P
	398140-72-2P	398140-73-3P	398140-74-4P	<b>398140-76-6P</b>	
	<b>398140-77-7P</b>	<b>398140-78-8P</b>	<b>398140-79-9P</b>		
	<b>398140-80-2P</b>	<b>398140-81-3P</b>	<b>398140-82-4P</b>		
	<b>398140-84-6P</b>	<b>398140-85-7P</b>	<b>398140-86-8P</b>		
	<b>398140-88-0P</b>	<b>398140-89-1P</b>	<b>398140-90-4P</b>		
	<b>398140-91-5P</b>	<b>398140-92-6P</b>	<b>398140-93-7P</b>		
	<b>398140-94-8P</b>	<b>398140-95-9P</b>	398140-97-1P		
	<b>398140-98-2P</b>	<b>398140-99-3P</b>	<b>398141-00-9P</b>		
	<b>398141-03-2P</b>	<b>398141-04-3P</b>	398141-05-4P	<b>398141-06-5P</b>	

398141-07-6P 398141-08-7P 398141-10-1P  
 398141-11-2P 398141-13-4P 398141-14-5P  
 398141-16-7P 398152-52-8P 405509-18-4P 405509-19-5P  
 405509-25-3P 405509-30-0P 412015-86-2P 471257-28-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos. photoresist compns. offering sharp patterns)

IT 297742-34-8

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(pos. photoresist compns. offering sharp patterns)

IT 926-02-3, tert-Butyl vinyl ether 4442-79-9,  
 Cyclohexyl ethanol 5240-72-2, 2-Norbornanemethanol 27779-29-9,  
 Isopinocampheol

RL: RCT (Reactant); RACT (Reactant or reagent)

(pos. photoresist compns. offering sharp patterns)

IT 391613-77-7P 398140-76-6P 398140-77-7P

398140-78-8P 398140-79-9P 398140-80-2P

398140-81-3P 398140-82-4P 398140-84-6P

398140-85-7P 398140-86-8P 398140-88-0P

398140-89-1P 398140-90-4P 398140-91-5P

398140-92-6P 398140-93-7P 398140-94-8P

398140-95-9P 398140-98-2P 398140-99-3P

398141-00-9P 398141-04-3P 398141-06-5P

398141-07-6P 398141-08-7P 398141-10-1P

398141-11-2P 398141-13-4P 398141-16-7P

398152-52-8P 405509-25-3P 405509-30-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos. photoresist compns. offering sharp patterns)

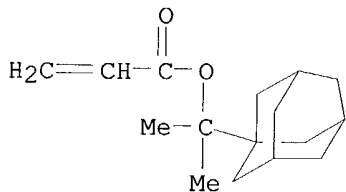
RN 391613-77-7 HCAPLUS

CN 2-Propenoic acid, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, polymer with  $\alpha,\alpha$ -dimethylbicyclo[2.2.1]hept-5-ene-2-methanol, 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 300833-10-7

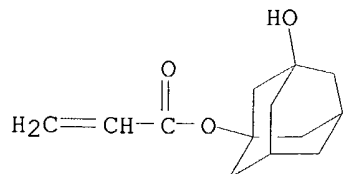
CMF C16 H24 O2



CM 2

CRN 216581-76-9

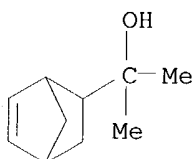
CMF C13 H18 O3



CM 3

CRN 22497-08-1

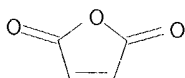
CMF C10 H16 O



CM 4

CRN 108-31-6

CMF C4 H2 O3



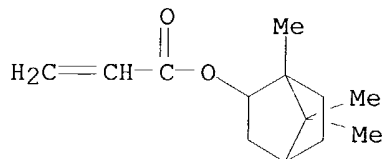
RN 398140-76-6 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, 2-(2-methoxyethoxy)ethyl 2-propenoate, 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 128946-20-3

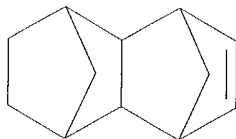
CMF C13 H20 O2



CM 2

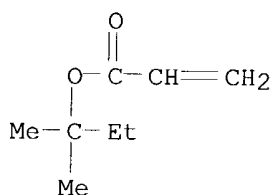


CRN 21635-90-5  
CMF C12 H16



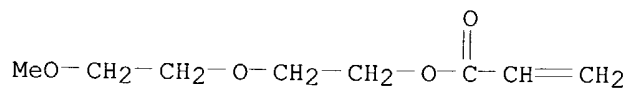
CM 3

CRN 7383-26-8  
CMF C8 H14 O2



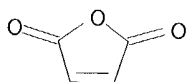
CM 4

CRN 7328-18-9  
CMF C8 H14 O4



CM 5

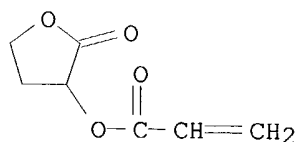
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-77-7 HCAPLUS  
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1.3]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

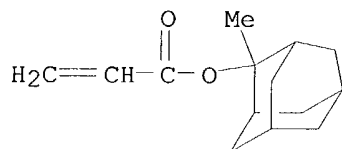
CM 1

CRN 328249-37-2  
CMF C7 H8 O4



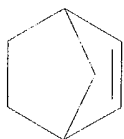
CM 2

CRN 249562-06-9  
CMF C14 H20 O2



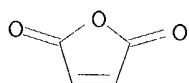
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

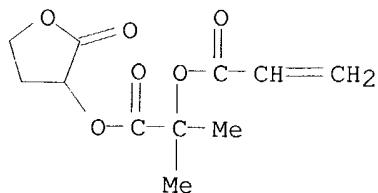
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-78-8 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and 2,5-furandione (9CI)  
(CA INDEX NAME)

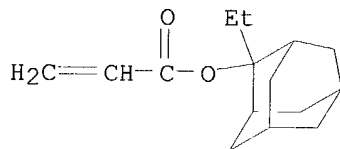
CM 1

CRN 383196-94-9  
CMF C11 H14 O6



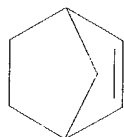
CM 2

CRN 303186-14-3  
CMF C15 H22 O2



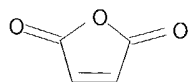
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3

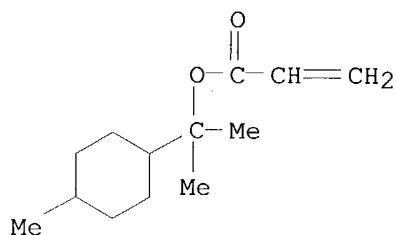


RN 398140-79-9 HCAPLUS  
CN 2-Propenoic acid, 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1-methyl-1-(4-methylcyclohexyl)ethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 342648-11-7

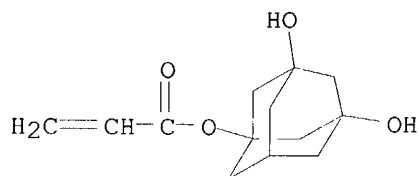
CMF C13 H22 O2



CM 2

CRN 216581-85-0

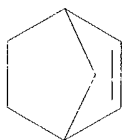
CMF C13 H18 O4



CM 3

CRN 498-66-8

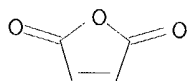
CMF C7 H10



CM 4

CRN 108-31-6

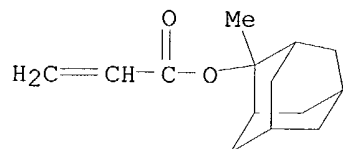
CMF C4 H2 O3



RN 398140-80-2 HCAPLUS  
 CN 2-Propenoic acid, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl  
 ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and  
 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

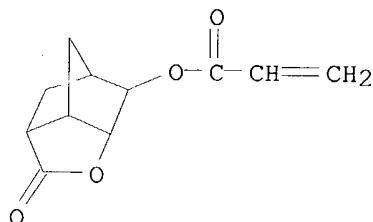
CM 1

CRN 249562-06-9  
 CMF C14 H20 O2



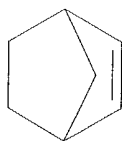
CM 2

CRN 242129-35-7  
 CMF C11 H12 O4



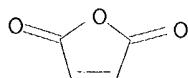
CM 3

CRN 498-66-8  
 CMF C7 H10



CM 4

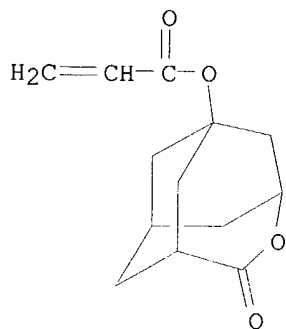
CRN 108-31-6  
 CMF C4 H2 O3



RN 398140-81-3 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione,  
 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate and  
 tetrahydro-5-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

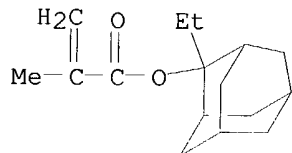
CM 1

CRN 265999-35-7  
 CMF C13 H16 O4



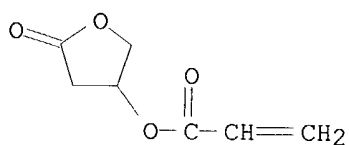
CM 2

CRN 209982-56-9  
 CMF C16 H24 O2



CM 3

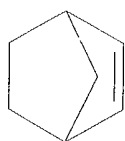
CRN 130225-01-3  
 CMF C7 H8 O4



CM 4

CRN 498-66-8

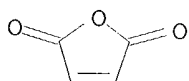
CMF C7 H10



CM 5

CRN 108-31-6

CMF C4 H2 O3



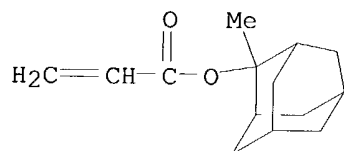
RN 398140-82-4 HCAPLUS

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 4-oxotricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

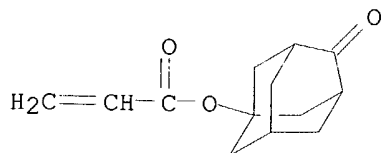
CMF C14 H20 O2



CM 2

CRN 216582-09-1

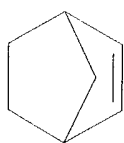
CMF C13 H16 O3



CM 3

CRN 498-66-8

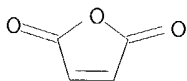
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



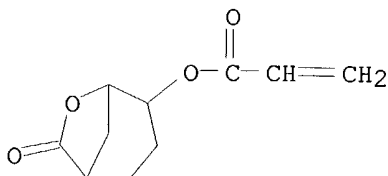
RN 398140-84-6 HCAPLUS

CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 1-cyclohexyl-1H-pyrrole-2,5-dione, 2,5-furandione and 7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 398140-83-5

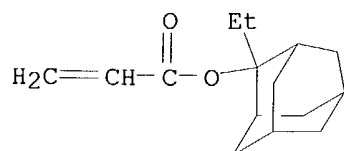
CMF C10 H12 O4



CM 2

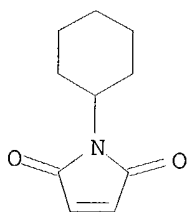


CRN 303186-14-3  
CMF C15 H22 O2



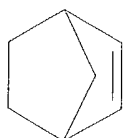
CM 3

CRN 1631-25-0  
CMF C10 H13 N O2



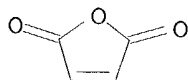
CM 4

CRN 498-66-8  
CMF C7 H10



CM 5

CRN 108-31-6  
CMF C4 H2 O3



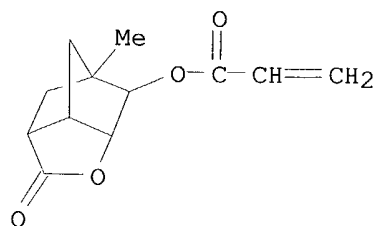
RN 398140-85-7 HCAPLUS  
CN 2-Propenoic acid, hexahydro-5-methyl-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione, hexahydro-6a-methyl-2-oxo-3,5-methano-2H-

cyclopenta[b]furan-6-yl 2-propenoate, hexahydro-6-methyl-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 392309-90-9

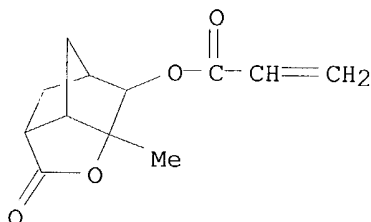
CMF C12 H14 O4



CM 2

CRN 392309-89-6

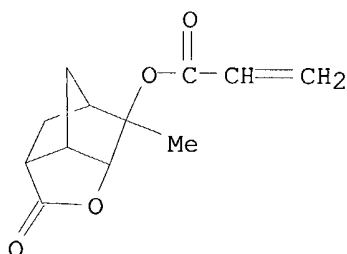
CMF C12 H14 O4



CM 3

CRN 392309-87-4

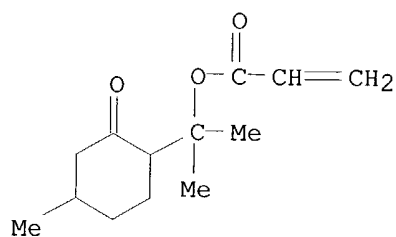
CMF C12 H14 O4



CM 4

CRN 312261-57-7

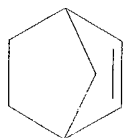
CMF C13 H20 O3



CM 5

CRN 498-66-8

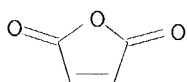
CMF C7 H10



CM 6

CRN 108-31-6

CMF C4 H2 O3



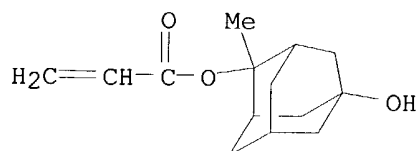
RN 398140-86-8 HCAPLUS

CN 2-Propenoic acid, 5-hydroxy-2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

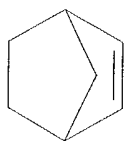
CRN 333359-29-8

CMF C14 H20 O3



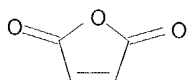
CM 2

CRN 498-66-8  
CMF C7 H10



CM 3

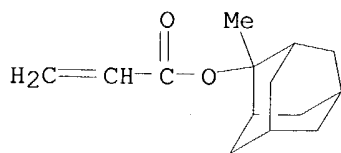
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-88-0 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-  
yl 2-propenoate (9CI) (CA INDEX NAME)

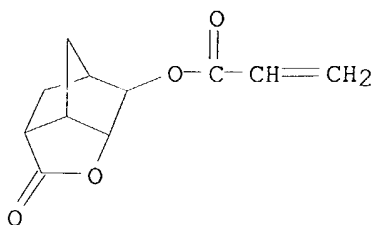
CM 1

CRN 249562-06-9  
CMF C14 H20 O2



CM 2

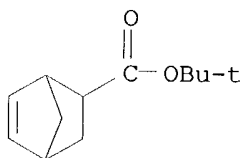
CRN 242129-35-7  
CMF C11 H12 O4



CM 3

CRN 154970-45-3

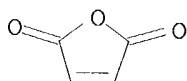
CMF C12 H18 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



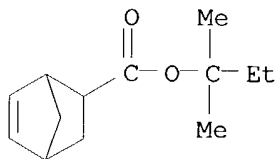
RN 398140-89-1 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-,  $\gamma$ -lactone, 2-(2-propenoate), polymer with 1,1-dimethylpropyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

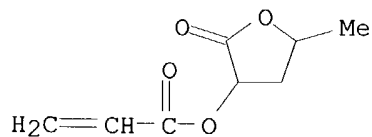
CRN 398140-58-4

CMF C13 H20 O2



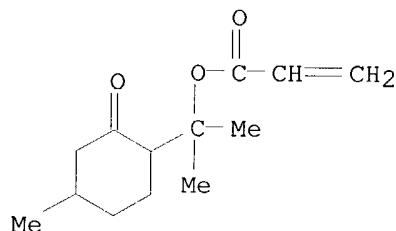
CM 2

CRN 383196-92-7  
CMF C8 H10 O4



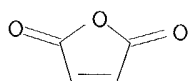
CM 3

CRN 312261-57-7  
CMF C13 H20 O3



CM 4

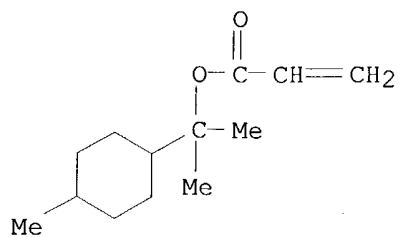
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-90-4 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, tetrahydro-2H-pyran-2-yl ester, polymer with 2,5-furandione, 1-methyl-1-(4-methylcyclohexyl)ethyl 2-propenoate and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

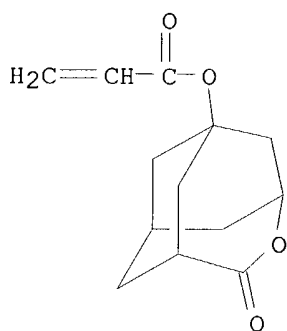
CRN 342648-11-7  
CMF C13 H22 O2



CM 2

CRN 265999-35-7

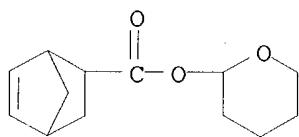
CMF C13 H16 O4



CM 3

CRN 154924-11-5

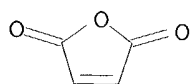
CMF C13 H18 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3

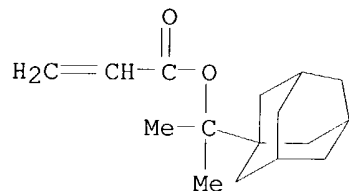


RN 398140-91-5 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
 polymer with 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate,  
 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl  
 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 300833-10-7

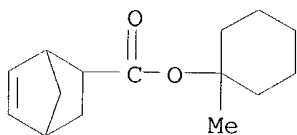
CMF C16 H24 O2



CM 2

CRN 279243-78-6

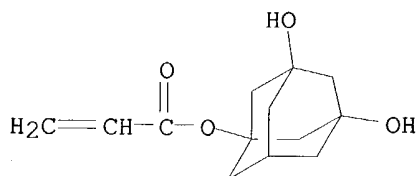
CMF C15 H22 O2



CM 3

CRN 216581-85-0

CMF C13 H18 O4

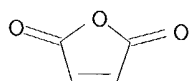


CM 4

CRN 108-31-6

CMF C4 H2 O3

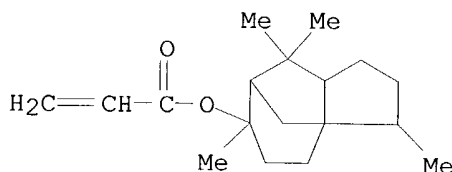




RN 398140-92-6 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
 polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl  
 2-propenoate and octahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-6-yl  
 2-propenoate (9CI) (CA INDEX NAME)

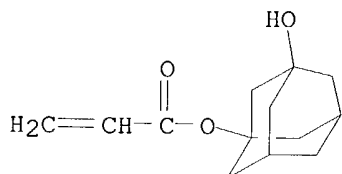
CM 1

CRN 313698-62-3  
 CMF C18 H28 O2



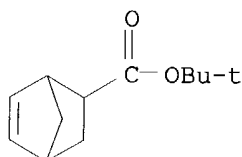
CM 2

CRN 216581-76-9  
 CMF C13 H18 O3



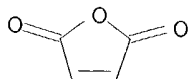
CM 3

CRN 154970-45-3  
 CMF C12 H18 O2



CM 4

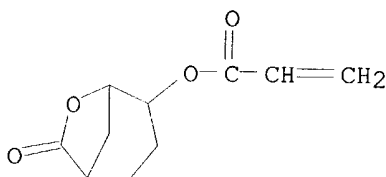
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-93-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 1,1-dimethylethyl 2-propenoate, 2,5-furandione and  
7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI) (CA INDEX NAME)

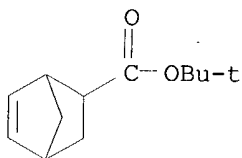
CM 1

CRN 398140-83-5  
CMF C10 H12 O4



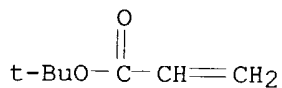
CM 2

CRN 154970-45-3  
CMF C12 H18 O2



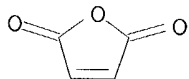
CM 3

CRN 1663-39-4  
CMF C7 H12 O2



CM 4

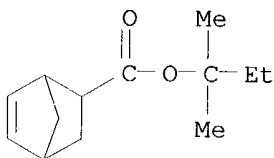
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-94-8 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl  
2-propenoate, 1,1-dimethylpropyl 2-propenoate and 2,5-furandione (9CI)  
(CA INDEX NAME)

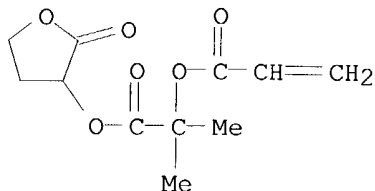
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



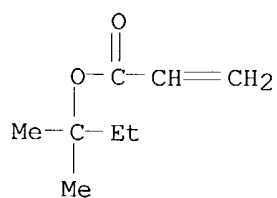
CM 2

CRN 383196-94-9  
CMF C11 H14 O6



CM 3

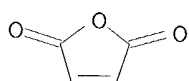
CRN 7383-26-8  
CMF C8 H14 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



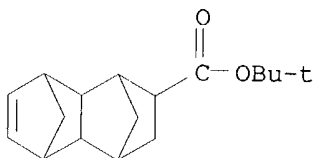
RN 398140-95-9 HCAPLUS

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethylethyl ester, polymer with 2-(2-ethoxyethoxy)ethyl 2-propenoate, ethoxymethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 195057-79-5

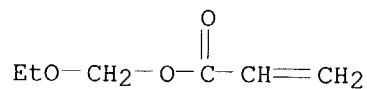
CMF C17 H24 O2



CM 2

CRN 101181-06-0

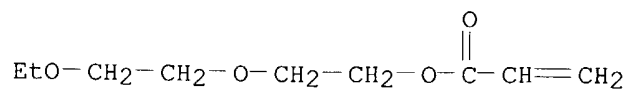
CMF C6 H10 O3



CM 3

CRN 7328-17-8

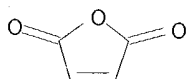
CMF C9 H16 O4



CM 4

CRN 108-31-6

CMF C4 H2 O3



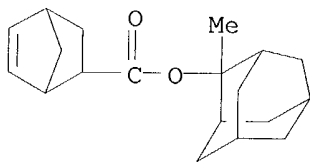
RN 398140-98-2 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and 2-methoxy-1,1-dimethylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 328087-85-0

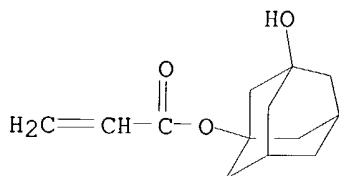
CMF C19 H26 O2



CM 2

CRN 216581-76-9

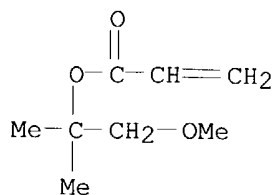
CMF C13 H18 O3



CM 3

CRN 213758-87-3

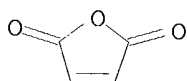
CMF C8 H14 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



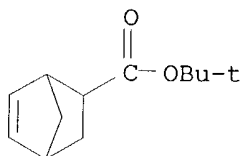
RN 398140-99-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5-yl acetate and tetrahydro-6-methoxy-2H-pyran-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 154970-45-3

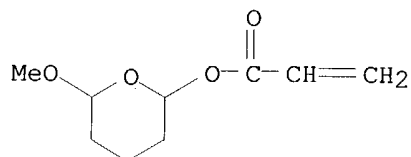
CMF C12 H18 O2



CM 2

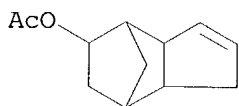
CRN 128795-96-0

CMF C9 H14 O4



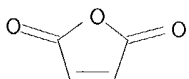
CM 3

CRN 2500-83-6  
CMF C12 H16 O2



CM 4

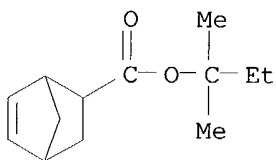
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-00-9 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and 2-methoxyethyl  
bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

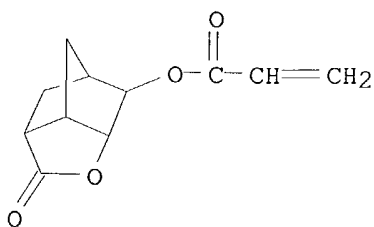
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



CM 2

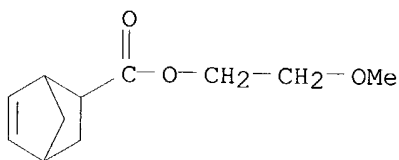
CRN 242129-35-7  
CMF C11 H12 O4



CM 3

CRN 46276-02-2

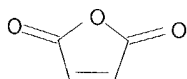
CMF C11 H16 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



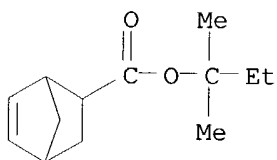
RN 398141-04-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 398140-58-4

CMF C13 H20 O2

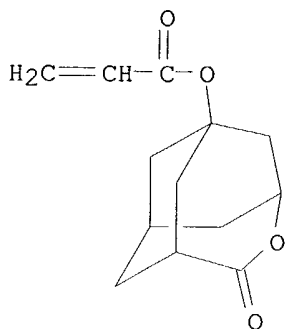




CM 2

CRN 265999-35-7

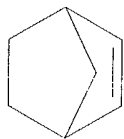
CMF C13 H16 O4



CM 3

CRN 498-66-8

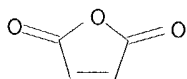
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



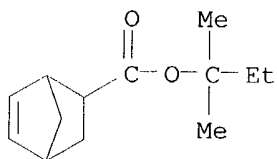
RN 398141-06-5 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, N-(methylsulfonyl)-2-propenamide and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

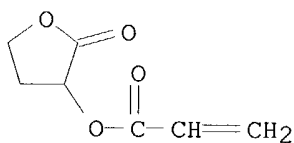
CRN 398140-58-4

CMF C13 H20 O2



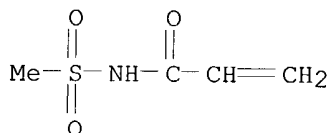
CM 2

CRN 328249-37-2  
CMF C7 H8 O4



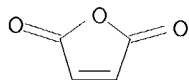
CM 3

CRN 79277-90-0  
CMF C4 H7 N O3 S



CM 4

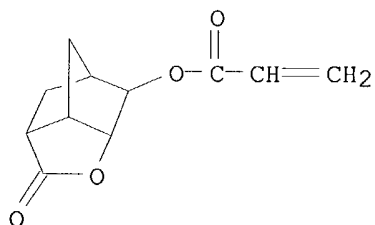
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-07-6 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and methyl 2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

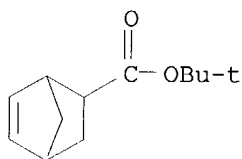
CRN 242129-35-7  
CMF C11 H12 O4



CM 2

CRN 154970-45-3

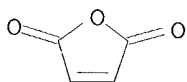
CMF C12 H18 O2



CM 3

CRN 108-31-6

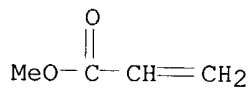
CMF C4 H2 O3



CM 4

CRN 96-33-3

CMF C4 H6 O2

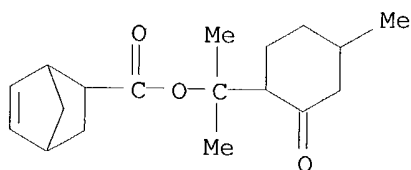


RN 398141-08-7 HCAPLUS

CM Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl ester, polymer with 2-cyanoethyl 2-propenoate, 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

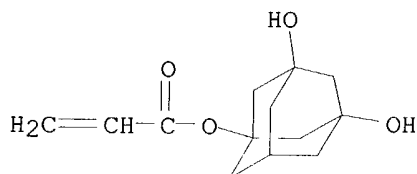
CM 1

CRN 312261-59-9  
CMF C18 H26 O3



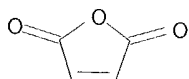
CM 2

CRN 216581-85-0  
CMF C13 H18 O4



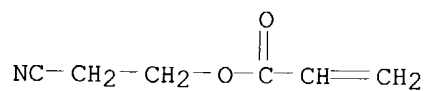
CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

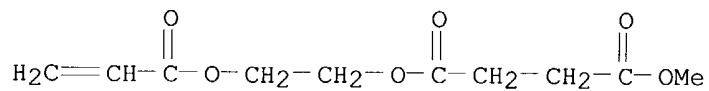
CRN 106-71-8  
CMF C6 H7 N O2



RN 398141-10-1 HCAPLUS  
CN Butanedioic acid, methyl 2-[(1-oxo-2-propenyl)oxy]ethyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 5-oxo-4-oxatricyclo[4.3.1.1.3,8]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

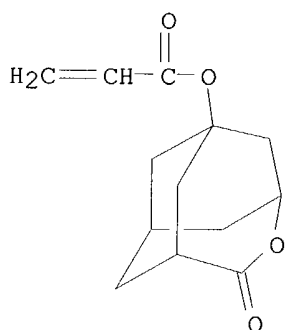
CM 1

CRN 398141-09-8  
CMF C10 H14 O6



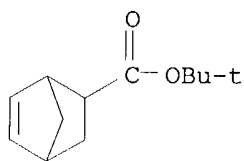
CM 2

CRN 265999-35-7  
CMF C13 H16 O4



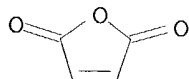
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3



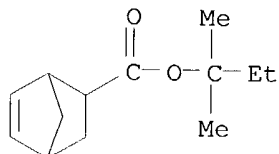
RN 398141-11-2 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and tetrahydro-5-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 398140-58-4

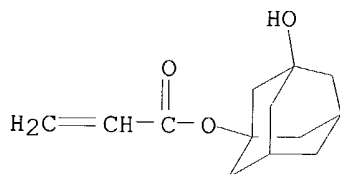
CMF C13 H20 O2



CM 2

CRN 216581-76-9

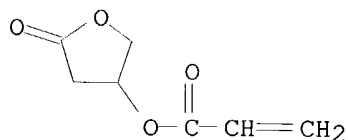
CMF C13 H18 O3



CM 3

CRN 130225-01-3

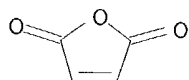
CMF C7 H8 O4



CM 4

CRN 108-31-6

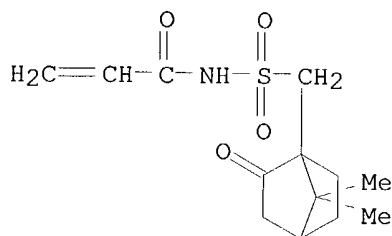
CMF C4 H2 O3



RN 398141-13-4 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
 polymer with N-[(7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl)methyl]sulfonyl]-2-propenamide, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

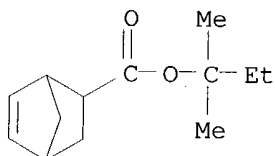
CM 1

CRN 398141-12-3  
 CMF C13 H19 N O4 S



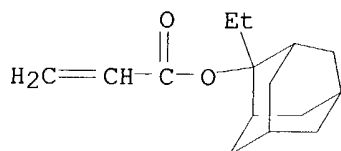
CM 2

CRN 398140-58-4  
 CMF C13 H20 O2



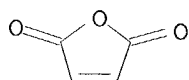
CM 3

CRN 303186-14-3  
 CMF C15 H22 O2



CM 4

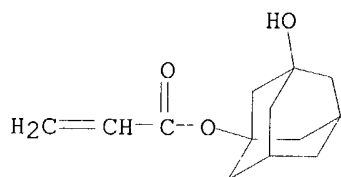
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-16-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate,  
2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and  
2-(2-methoxyethoxy)ethyl 2-propenoate (9CI) (CA INDEX NAME)

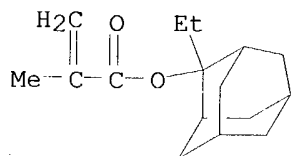
CM 1

CRN 216581-76-9  
CMF C13 H18 O3



CM 2

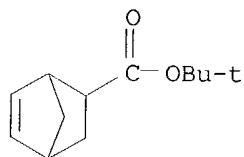
CRN 209982-56-9  
CMF C16 H24 O2



CM 3

CRN 154970-45-3  
CMF C12 H18 O2

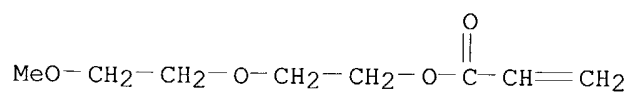




CM 4

CRN 7328-18-9

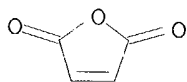
CMF C8 H14 O4



CM 5

CRN 108-31-6

CMF C4 H2 O3



RN 398152-52-8 HCAPLUS

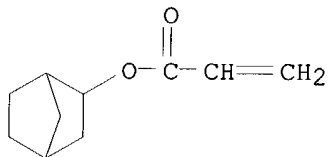
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 5(or 6)-cyanobicyclo[2.2.1]hept-2-yl 2-propenoate, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI). (CA INDEX NAME)

CM 1

CRN 398152-51-7

CMF C11 H13 N O2

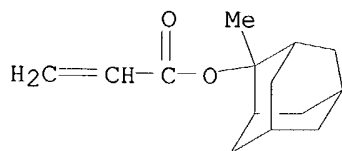
CCI IDS



D1- CN

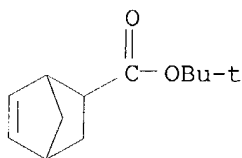
CM 2

CRN 249562-06-9  
CMF C14 H20 O2



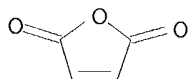
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

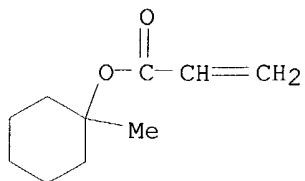
CRN 108-31-6  
CMF C4 H2 O3



RN 405509-25-3 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with  
bicyclo[2.2.1]hept-2-ene, 2,5-furandione, 3a,4,5,6,7,7a-hexahydro-4,7-  
methano-1H-inden-6-yl acetate and 1-methylcyclohexyl 2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

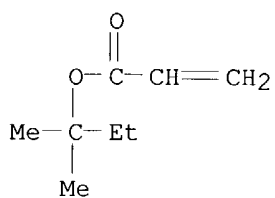
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CMF C10 H16 O2



CM 2

CRN 7383-26-8

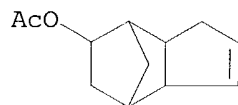
CMF C8 H14 O2



CM 3

CRN 5413-60-5

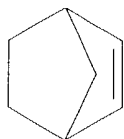
CMF C12 H16 O2



CM 4

CRN 498-66-8

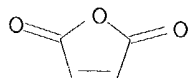
CMF C7 H10



CM 5

CRN 108-31-6

CMF C4 H2 O3



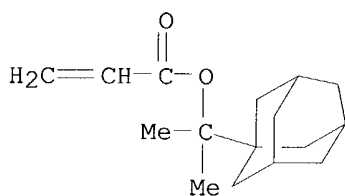
RN 405509-30-0 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate, 2-methylpropyl 2-propenoate and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 300833-10-7

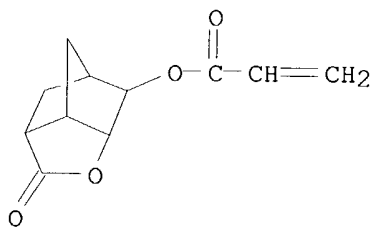
CMF C16 H24 O2



CM 2

CRN 242129-35-7

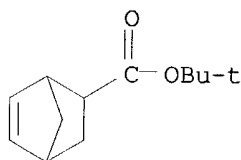
CMF C11 H12 O4



CM 3

CRN 154970-45-3

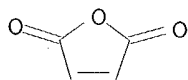
CMF C12 H18 O2



CM 4

CRN 108-31-6

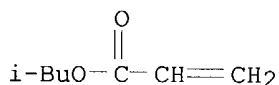
CMF C4 H2 O3



CM 5

CRN 106-63-8

CMF C7 H12 O2



L106 ANSWER 15 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:734116 HCAPLUS

DN 137:270527

TI Positive-working photoresists with high sensitivity and good resolution on development

IN Kodama, Kunihiro

PA ~~Fuji Photo Film Co., Ltd., Japan~~

SO Jpn. Kokai Tokkyo Koho, 46 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

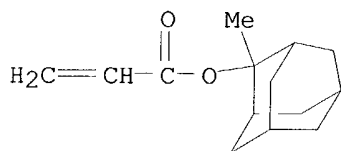
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002278072	A2	20020927	JP 2001-83017	20010322
PRAI	JP 2001-83017		20010322		
OS	MARPAT 137:270527				

AB The compns. contain (A) radiation-induced acid-generating compds. of R1C(R2)(R3)S+Y1Y2X- type (R1 = optionally substituted 2-nitrophenyl group; R2, R3 = H, alkyl, cyano, aryl group; Y1, Y2 = alkyl, aryl, aralkyl; provided that Y1 and Y2 together can form a ring with S+; X- = non-nucleophilic anions), (B) resins having mono- or polyalicyclic hydrocarbyl structure and being decomposable by acid to become dissolvable in alkali developing solution, (C) a compound bearing acid-labile group which becomes highly soluble in alkali developing solution by the action of acid for preventing the solubilization of compds. having mol. weight below 3000, and (D) a surfactant. Thus, adding over 4 h a solution of 2-methyl-2-adamantyl methacrylate 5.0, mevalonic lactone methacrylate 4.23, V-65 (azo radical initiator) 0.534 and AcNMe2 30.0 to AcNMe2 7.0 g heated at 60°, reacting for 2 h, further adding 0.267 V-650, reacting for 2 h and working up gave a copolymer with Mw 5500 and Mw/Mn 1.9. Mixing 20 parts the copolymer with 1-[(2-nitrophenyl)methyl]tetrahydrothiophenium perfluorobutylsulfonate 0.5, 1,5-diazabicyclo[4.3.0]-5-nonene 0.05 and

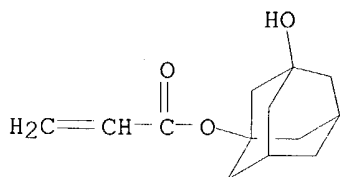
Megafac R 08 (fluoro surfactant) 0.02 g in a 8/2 mixture of propylene glycol monomethyl **ether** acetate and propylene glycol monomethyl **ether** to a solids content of 13%, filtering, spin coating on a silane-primed Si wafer, and drying at 120° for 90 s gave a photoresist layer which was then **patterned** using a photomask and ArF excimer laser stepper and developed with tetramethylammonium hydroxide to give **patterns** with good resolution

- IC ICM G03F007-039  
ICS C08K005-00; C08K005-36; C08L101-02
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Crosslinking catalysts  
(acid-generating compds.; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT Sulfonium compounds  
RL: CAT (Catalyst use); USES (Uses)  
(acid-generating compds.; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT Acids, uses  
RL: CAT (Catalyst use); USES (Uses)  
(in-situ crosslinking catalysts; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT Positive **photoresists**  
Printed circuit boards  
Surfactants  
(pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT Polysiloxanes, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(surfactant; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT 19600-49-8, Triphenylsulfonium acetate 66003-78-9 133710-62-0  
171292-12-9 227199-92-0 241806-75-7 258872-05-8 300374-81-6  
359434-73-4 365971-84-2 376357-89-0 389859-76-1 461054-57-9  
461054-59-1 461054-60-4 461054-65-9 461054-68-2 461054-70-6  
461054-71-7 461054-73-9 461054-80-8 462653-42-5 462653-44-7  
462653-46-9 462653-48-1 462653-49-2  
RL: CAT (Catalyst use); USES (Uses)  
(acid-generating compds.; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT 60-80-0, Antipyrine 484-47-9, 2,4,5-Triphenylimidazole 1116-76-3,  
Tri-n-octylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene  
24544-04-5, 2,6-Diisopropylaniline  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(base compound; pos.-working **photoresists** with high sensitivity and good resolution on development)
- IT 177080-68-1P, 2-Methyl-2-adamantyl methacrylate-mevalonic lactone  
methacrylate copolymer 195000-67-0P 195154-83-7P 216308-45-1P,  
Methacrylic acid-2-methyl-2-adamantyl methacrylate-mevalonic lactone  
methacrylate copolymer 258879-87-7P 260448-02-0P 288303-55-9P  
297156-40-2P 304441-22-3P 307976-24-5P 324770-96-9P  
**355391-93-4P** 357413-69-5P 357413-70-8P 357413-71-9P  
406722-62-1P **448959-53-3P** **460740-31-2P**  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)  
(pos.-working **photoresists** with high sensitivity and good

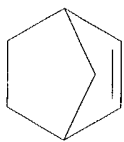
resolution on development)  
 IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08 364039-09-8,  
 Troysol S 336  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (surfactant; pos.-working **photoresists** with high sensitivity  
 and good resolution on development)  
 IT **355391-93-4P 448959-53-3P 460740-31-2P**  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)  
 (pos.-working **photoresists** with high sensitivity and good  
 resolution on development)  
 RN 355391-93-4 HCAPLUS  
 CN 2-Propenoic acid, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, polymer  
 with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 2-  
 methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 249562-06-9  
 CMF C14 H20 O2



CM 2  
 CRN 216581-76-9  
 CMF C13 H18 O3

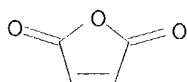


CM 3  
 CRN 498-66-8  
 CMF C7 H10



CM 4

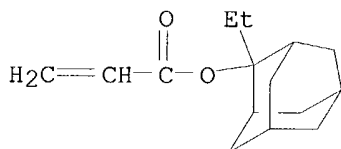
CRN 108-31-6  
CMF C4 H2 O3



RN 448959-53-3 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate,  
2,5-furandione and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate  
(9CI) (CA INDEX NAME)

CM 1

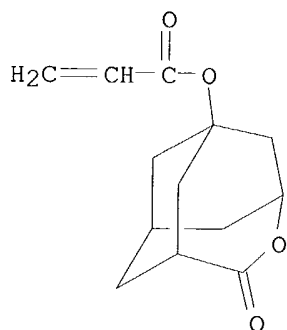
CRN 303186-14-3  
CMF C15 H22 O2



CM 2

CRN 265999-35-7  
CMF C13 H16 O4

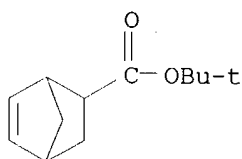




CM 3

CRN 154970-45-3

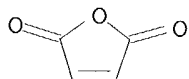
CMF C12 H18 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



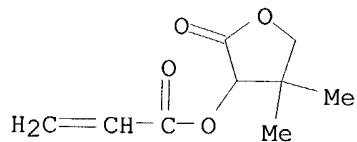
RN 460740-31-2 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-4,4-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

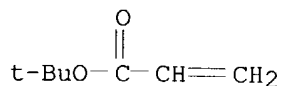
CRN 84822-49-1

CMF C9 H12 O4



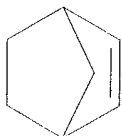
CM 2

CRN 1663-39-4  
CMF C7 H12 O2



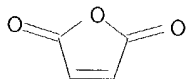
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

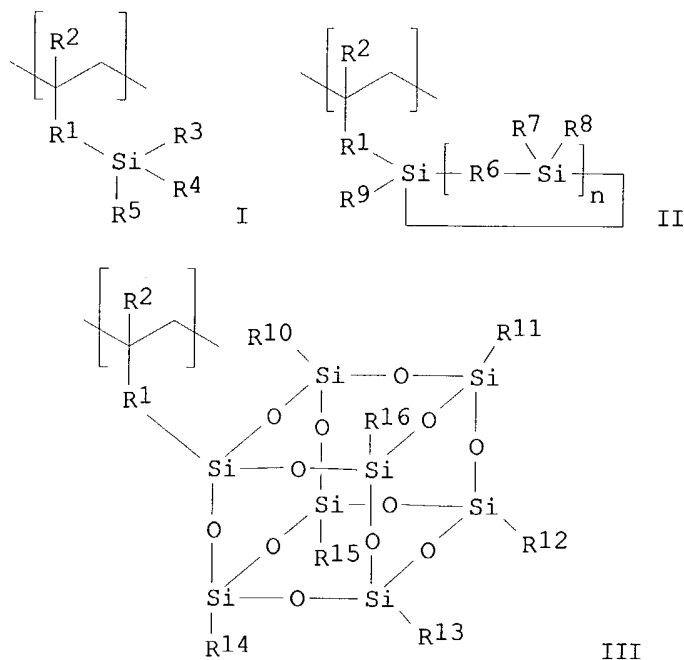
CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 16 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:688176 HCAPLUS  
DN 137:224121  
TI Copolymers containing **allylsilane** derivatives, their chemically  
amplified resist materials, and **pattern** formation thereof  
IN Hatakeyama, Jun; Takeda, Takanobu; Ishihara, Toshinobu; Kubota, Toru;  
Tonomura, Yoichi  
PA Shin-Etsu Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 38 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002256033	A2	<u>20020911</u>	JP 2001-56536	20010301
PRAI	JP 2001-56536		20010301		
GI					

*D.P.*



AB The copolymers, useful for bilayer resists, contain  $\geq 1$  repeating units selected from I, II, and III (R1 = C1-10 linear, branched, or cyclic alkylene; R2 = H, C1-10 linear, branched, or cyclic alkyl; R3-R5 = C1-20 alkyl, haloalkyl, C6-20 aryl, Si-containing group which bond Si in the formula as siloxane bond or silalkylene bond;  $\geq 1$  of R3-R5 is Si-containing group; R6 = O, C1-10 linear, branched, or cyclic alkylene, arylene; R7-16 = C1-10 linear, branched, or cyclic alkyl, fluorinated alkyl, aryl; n = 2-10 integer). Preferably, the copolymers further contain repeating units based on maleic anhydride derivs and tetrafluoroethylene derivs. The copolymers may contain  $\leq 90$  mol% acid-unstable groups. The copolymers are useful for resist materials, especially chemical amplified resist

materials which also contain acid generators, organic solvents, dissoln. inhibitors, and bases. The resist materials are applied on substrates, heated, exposed to high-energy ray with wavelength  $\leq 300$  nm or electron beam via photomasks, heated if necessary, and developed to form **patterns** which may be further etched by using O plasma or Cl- or Br-containing halogen gases.

IC ICM C08F230-08

ICS C08F212-14; C08F214-00; C08F216-14; C08F220-10; C08F222-06; C08F222-40; C08F232-00; C08F234-00; C08K005-00; C08K005-16; C08L043-04; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST **allylsilane** deriv copolymer chem amplified resist pos; bilayer resist pos **allylsilane** deriv copolymer; pos photoresist **allylsilane** deriv copolymer; electron beam resist pos **allylsilane** deriv copolymer; deep UV resist pos **allylsilane** deriv copolymer

IT Positive photoresists

(UV; chemical amplified resists containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT Electron beam resists  
(pos.-working; chemical amplified resists containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT **455303-22-7P** 455303-24-9P 455303-26-1P 455303-28-3P  
455303-30-7P 455303-32-9P **455303-34-1P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(chemical amplified **resists** containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT 102-82-9, Tributylamine 3002-18-4 211919-60-7 409321-23-9  
RL: MOA (Modifier or additive use); USES (Uses)  
(control of acid diffusion velocity with; chemical amplified resists containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT 409321-21-7  
RL: MOA (Modifier or additive use); USES (Uses)  
(dissoln. inhibitor; chemical amplified resists containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT 66003-76-7 66003-78-9  
RL: CAT (Catalyst use); USES (Uses)  
(photoacid generator; chemical amplified resists containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

IT **455303-22-7P 455303-34-1P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(chemical amplified **resists** containing copolymers of **allylsilane** derivs. for bilayer resist **patterns**)

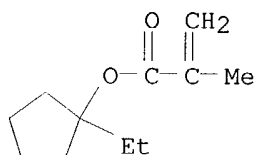
RN 455303-22-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 2,5-furandione and pentamethyl-2-propenyldisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

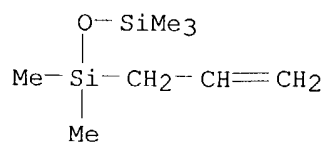
CMF C11 H18 O2



CM 2

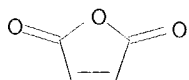
CRN 7087-19-6

CMF C8 H20 O Si2



CM 3

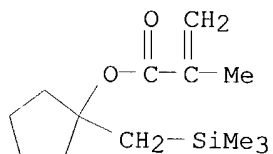
CRN 108-31-6  
CMF C4 H2 O3



RN 455303-34-1 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 1-[(trimethylsilyl)methyl]cyclopentyl ester,  
polymer with 2,5-furandione and heptamethyl-2-propenylcyclotetrasiloxane  
(9CI) (CA INDEX NAME)

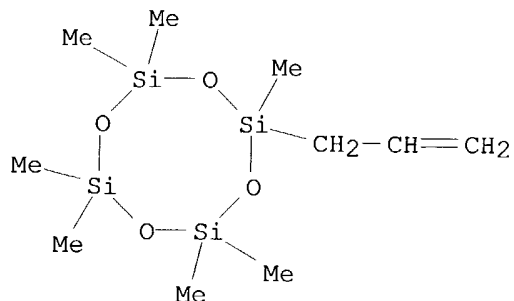
CM 1

CRN 409320-47-4  
CMF C13 H24 O2 Si

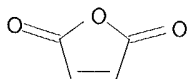


CM 2

CRN 1087-58-7  
CMF C10 H26 O4 Si4



CM 3

CRN 108-31-6  
CMF C4 H2 O3

L106 ANSWER 17 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:673047 HCAPLUS

DN 137:224108

TI Storage-stable excimer laser-sensitive positive-working photosensitive compositions with reduced **pattern** variation on defocusing

IN Kodama, Kunihiko; Sato, Kenichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 86 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002251012	A2	20020906	JP 2001-48784	20010223
	US 2003017415	A1	20030123	US 2002-79414	20020222
PRAI	JP 2001-48602	A	20010223		
	JP 2001-48783	A	20010223		
	JP 2001-48784	A	20010223		
	JP 2001-48880	A	20010223		
	JP 2001-157366	A	20010525		
	JP 2001-157367	A	20010525		

AB The compns. comprise (A) photoacid generators, (B) resins containing alicyclic hydrocarbon structures, which increase their alkali solubility by acid decomposition, (C) base compds., and (D) fluoro- and/or silicone-based surfactants, wherein the photoacid generator is a mixture of triarylsulfonium salts and non-aromatic sulfonium salts. The compns. are useful for chemical amplified photoresists suitable for halftone phase-shift masks.

IC ICM G03F007-039

ICS C08K005-00; C08K005-36; C08L101-00; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Positive **photoresists**

(UV; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT Sulfonium compounds

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(arene, photoacid generators; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT Surfactants

(fluorosurfactants; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced

- pattern** variation on defocusing)
- IT Cycloalkenes  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polymers; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT Aromatic compounds  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (sulfonium, photoacid generators; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT Polysiloxanes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (surfactant; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT 66003-78-9 144317-44-2 177034-80-9 258872-05-8 284474-28-8  
 338445-24-2 391232-40-9 398141-18-9 421555-72-8  
 RL: CAT (Catalyst use); USES (Uses)  
 (aromatic sulfonyl photoacid generator; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT 484-47-9, 2,4,5-Triphenylimidazole 621-77-2, Tripentylamine 3001-72-7,  
 1,5-Diazabicyclo[4.3.0]non-5-ene 3040-44-6, 1-Piperidineethanol  
 19293-63-1, Dicyclohexylmethylamine 19600-49-8, Triphenylsulfonium acetate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (base compound; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT 3744-08-9P, Triphenylsulfonium iodide 303177-16-4P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)
- IT 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer 288303-55-9P 364736-22-1P 391232-36-3P  
**391613-77-7P** 398140-36-8P 398140-38-0P 398140-40-4P  
 398140-43-7P 398140-45-9P 398140-50-6P 398140-52-8P 398140-54-0P  
 398140-55-1P 398140-57-3P 398140-59-5P 398140-60-8P 398140-62-0P  
 398140-64-2P 398140-65-3P 398140-68-6P 398140-69-7P 398140-71-1P  
 398140-72-2P 398140-73-3P 398140-74-4P **398140-75-5P**  
**398140-76-6P** **398140-77-7P** **398140-78-8P**  
**398140-79-9P** **398140-80-2P** **398140-81-3P**  
**398140-82-4P** **398140-84-6P** **398140-85-7P**  
**398140-86-8P** 398140-87-9P **398140-88-0P**, tert-Butyl norbornenecarboxylate-maleic anhydride-2-methyl-2-adamantyl acrylate-norbornenelactone acrylate copolymer **398140-89-1P**  
**398140-90-4P** **398140-91-5P** **398140-92-6P**  
**398140-93-7P** **398140-94-8P** **398140-95-9P**  
 398140-97-1P **398140-98-2P** **398140-99-3P**  
**398141-00-9P** 398141-03-2P **398141-04-3P**  
**398141-06-5P** **398141-07-6P** **398141-08-7P**  
**398141-10-1P** **398141-11-2P** **398141-13-4P**  
 398141-14-5P **398141-16-7P** **398152-52-8P** 405509-18-4P  
 405509-29-7P **405509-30-0P** 455521-67-2P 455521-72-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 71-43-2, Benzene, reactions 110-01-0, Tetrahydrothiophene 945-51-7, Diphenylsulfoxide 1763-23-1, Perfluorooctanesulfonic acid 5469-26-1, 1-Bromo-3,3-dimethyl-2-butanone 12027-06-4, Ammonium iodide 29420-49-3, Potassium perfluorobutanesulfonate 218151-20-3 455947-79-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 160481-39-0 301153-78-6 371921-65-2 383367-32-6 393171-41-0 455521-76-3 455521-81-0 455521-85-4 455521-89-8  
 RL: CAT (Catalyst use); USES (Uses)  
 (non-aromatic sulfonyl photoacid generator; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 171292-12-9  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoacid generator; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 144089-15-6P 241806-75-7P 347193-29-7P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (photoacid generator; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 96-48-0,  $\gamma$ -Butyrolactone 97-64-3, Ethyl lactate 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 763-69-9 1320-67-8, Propylene glycol methyl **ether** 84540-57-8, Propylene glycol methyl **ether** acetate  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (surfactant; chemical amplified storage-stable excimer laser-sensitive pos. **photoresists** with reduced **pattern** variation on defocusing)

IT 391613-77-7P 398140-75-5P 398140-76-6P 398140-77-7P 398140-78-8P 398140-79-9P 398140-80-2P 398140-81-3P 398140-82-4P 398140-84-6P 398140-85-7P 398140-86-8P 398140-88-0P, tert-Butyl norbornenecarboxylate-maleic anhydride-2-methyl-2-adamantyl acrylate-norbornenelactone acrylate copolymer 398140-89-1P 398140-90-4P 398140-91-5P 398140-92-6P 398140-93-7P 398140-94-8P 398140-95-9P 398140-98-2P 398140-99-3P 398141-00-9P 398141-04-3P 398141-06-5P 398141-07-6P 398141-08-7P 398141-10-1P 398141-11-2P 398141-13-4P 398141-16-7P 398152-52-8P 405509-30-0P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)



(chemical amplified storage-stable excimer laser-sensitive pos.  
**photoresists** with reduced **pattern** variation on  
defocusing)

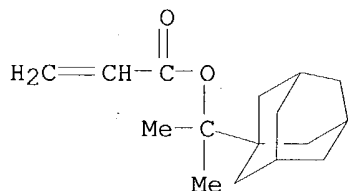
RN 391613-77-7 HCAPLUS

CN 2-Propenoic acid, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl ester, polymer  
with  $\alpha,\alpha$ -dimethylbicyclo[2.2.1]hept-5-ene-2-methanol,  
2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl  
2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 300833-10-7

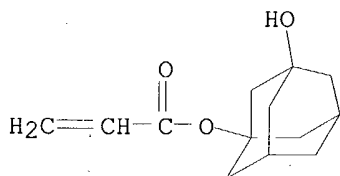
CMF C16 H24 O2



CM 2

CRN 216581-76-9

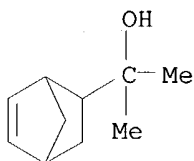
CMF C13 H18 O3



CM 3

CRN 22497-08-1

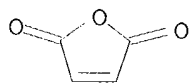
CMF C10 H16 O



CM 4

CRN 108-31-6

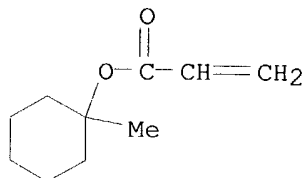
CMF C4 H2 O3



RN 398140-75-5 HCAPLUS  
 CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with  
 bicyclo[2.2.1]hept-2-ene, 2,5-furandione, 3a,4,5,6,7,7a-hexahydro-4,7-  
 methano-1H-inden-5-yl acetate and 1-methylcyclohexyl 2-propenoate (9CI)  
 (CA INDEX NAME)

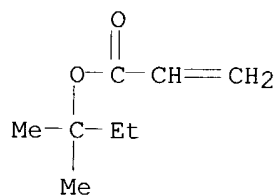
CM 1

CRN 178889-47-9  
 CMF C10 H16 O2



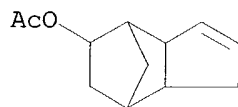
CM 2

CRN 7383-26-8  
 CMF C8 H14 O2



CM 3

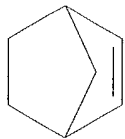
CRN 2500-83-6  
 CMF C12 H16 O2



CM 4

CRN 498-66-8

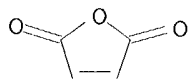
CMF C7 H10



CM 5

CRN 108-31-6

CMF C4 H2 O3



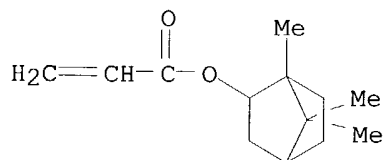
RN 398140-76-6 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, 2-(2-methoxyethoxy)ethyl 2-propenoate, 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 128946-20-3

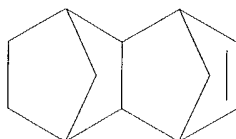
CMF C13 H20 O2



CM 2

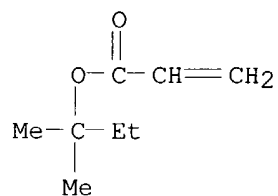
CRN 21635-90-5

CMF C12 H16



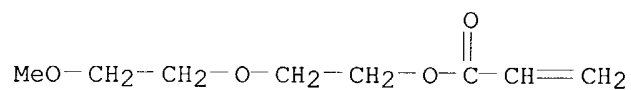
CM 3

CRN 7383-26-8  
CMF C8 H14 O2



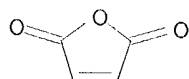
CM 4

CRN 7328-18-9  
CMF C8 H14 O4



CM 5

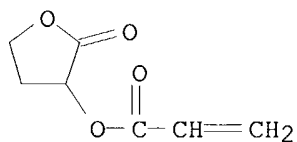
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-77-7 HCAPLUS  
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

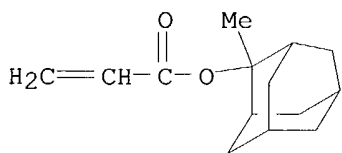
CRN 328249-37-2  
CMF C7 H8 O4



CM 2

CRN 249562-06-9

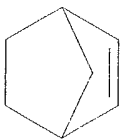
CMF C14 H20 O2



CM 3

CRN 498-66-8

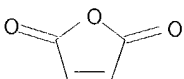
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



RN 398140-78-8 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

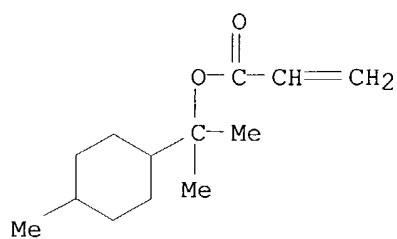
CM 1

CRN 383196-94-9

CMF C11 H14 O6

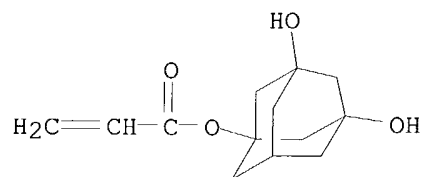


CMF C13 H22 O2



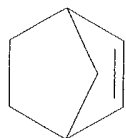
CM 2

CRN 216581-85-0  
CMF C13 H18 O4



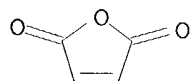
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3



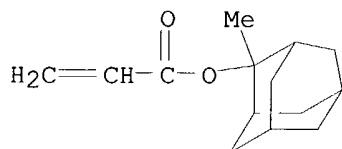
RN 398140-80-2 HCAPLUS  
CN 2-Propenoic acid, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl  
ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and

2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

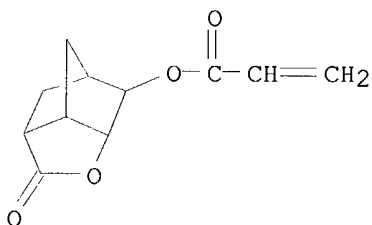
CMF C14 H20 O2



CM 2

CRN 242129-35-7

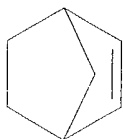
CMF C11 H12 O4



CM 3

CRN 498-66-8

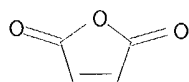
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3

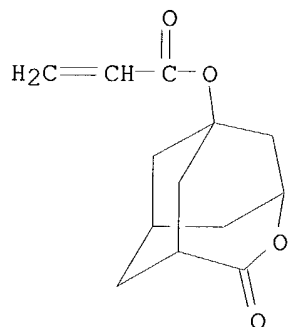




RN 398140-81-3 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione,  
 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate and  
 tetrahydro-5-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

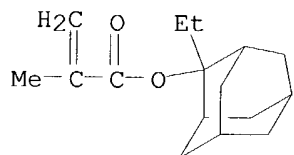
CM 1

CRN 265999-35-7  
 CMF C13 H16 O4



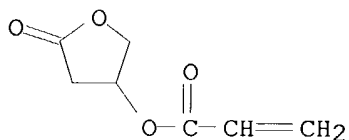
CM 2

CRN 209982-56-9  
 CMF C16 H24 O2



CM 3

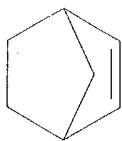
CRN 130225-01-3  
 CMF C7 H8 O4



CM 4

CRN 498-66-8

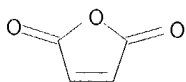
CMF C7 H10



CM 5

CRN 108-31-6

CMF C4 H2 O3



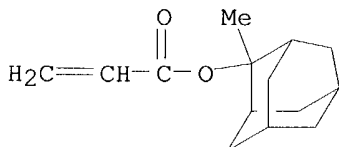
RN 398140-82-4 HCAPLUS

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 4-oxotricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

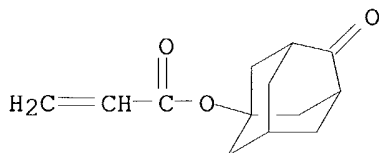
CMF C14 H20 O2



CM 2

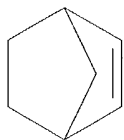
CRN 216582-09-1

CMF C13 H16 O3



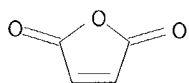
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

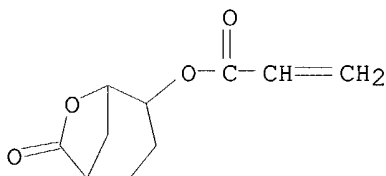
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-84-6 HCAPLUS  
CN. 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with  
bicyclo[2.2.1]hept-2-ene, 1-cyclohexyl-1H-pyrrole-2,5-dione,  
2,5-furandione and 7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI)  
(CA INDEX NAME)

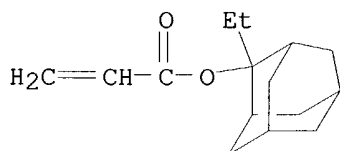
CM 1

CRN 398140-83-5  
CMF C10 H12 O4



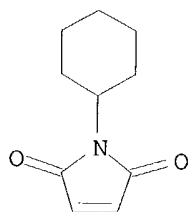
CM 2

CRN 303186-14-3  
CMF C15 H22 O2



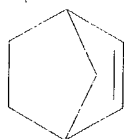
CM 3

CRN 1631-25-0  
CMF C10 H13 N O2



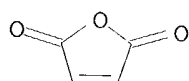
CM 4

CRN 498-66-8  
CMF C7 H10



CM 5

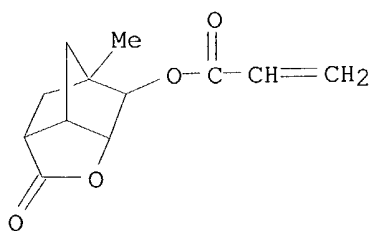
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-85-7 HCAPLUS  
CN 2-Propenoic acid, hexahydro-5-methyl-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione, hexahydro-6a-methyl-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate, hexahydro-6-methyl-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl 2-propenoate (9CI) (CA INDEX NAME)

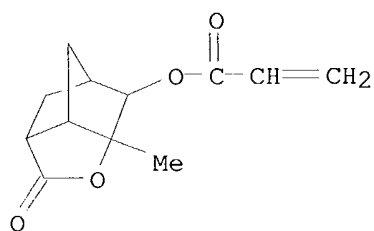
CM 1

CRN 392309-90-9  
CMF C12 H14 O4



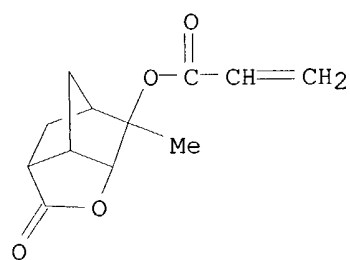
CM 2

CRN 392309-89-6  
CMF C12 H14 O4



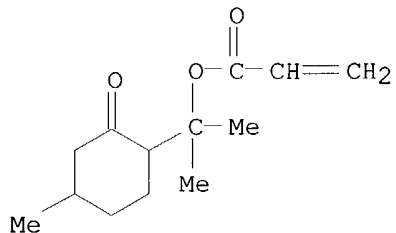
CM 3

CRN 392309-87-4  
CMF C12 H14 O4



CM 4

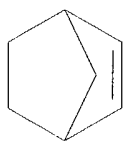
CRN 312261-57-7  
CMF C13 H20 O3



CM 5

CRN 498-66-8

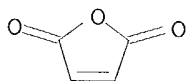
CMF C7 H10



CM 6

CRN 108-31-6

CMF C4 H2 O3



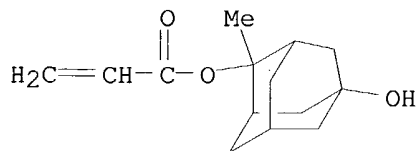
RN 398140-86-8 HCAPLUS

CN 2-Propenoic acid, 5-hydroxy-2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

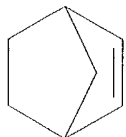
CRN 333359-29-8

CMF C14 H20 O3



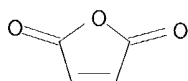
CM 2

CRN 498-66-8  
CMF C7 H10



CM 3

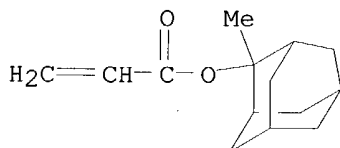
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-88-0 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-  
yl 2-propenoate (9CI) (CA INDEX NAME)

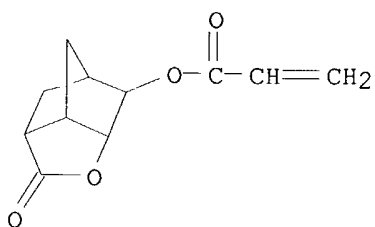
CM 1

CRN 249562-06-9  
CMF C14 H20 O2



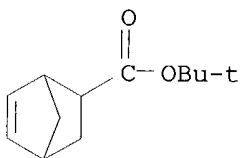
CM 2

CRN 242129-35-7  
CMF C11 H12 O4



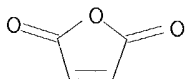
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

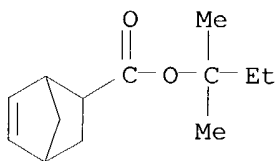
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-89-1 HCAPLUS  
CN. Pentonic acid, 3,5-dideoxy-,  $\gamma$ -lactone, 2-(2-propenoate), polymer  
with 1,1-dimethylpropyl bicyclo[2.2.1]hept-5-ene-2-carboxylate,  
2,5-furandione and 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl 2-propenoate  
(9CI) (CA INDEX NAME)

CM 1

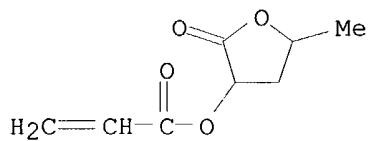
CRN 398140-58-4  
CMF C13 H20 O2





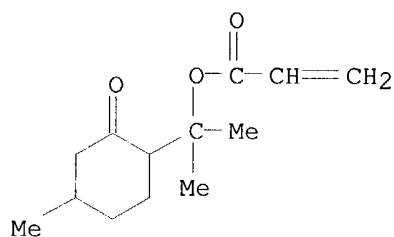
CM 2

CRN 383196-92-7  
CMF C8 H10 O4



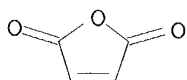
CM 3

CRN 312261-57-7  
CMF C13 H20 O3



CM 4

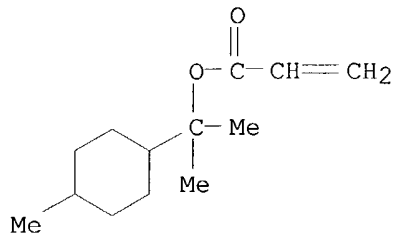
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-90-4 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, tetrahydro-2H-pyran-2-yl ester, polymer with 2,5-furandione, 1-methyl-1-(4-methylcyclohexyl)ethyl 2-propenoate and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

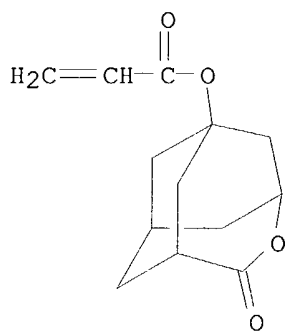
CRN 342648-11-7  
CMF C13 H22 O2



CM 2

CRN 265999-35-7

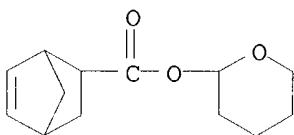
CMF C13 H16 O4



CM 3

CRN 154924-11-5

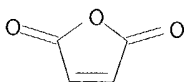
CMF C13 H18 O3



CM 4

CRN 108-31-6

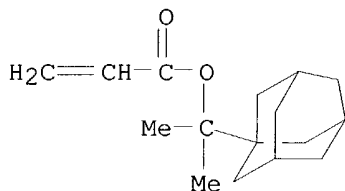
CMF C4 H2 O3



RN 398140-91-5 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
 polymer with 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate,  
 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl  
 2-propenoate (9CI) (CA INDEX NAME)

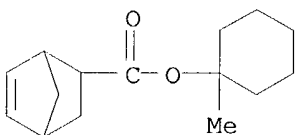
CM 1

CRN 300833-10-7  
 CMF C16 H24 O2



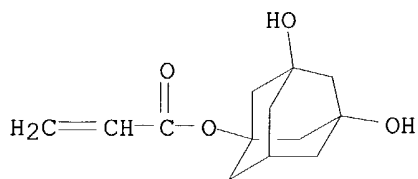
CM 2

CRN 279243-78-6  
 CMF C15 H22 O2



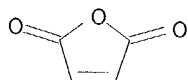
CM 3

CRN 216581-85-0  
 CMF C13 H18 O4



CM 4

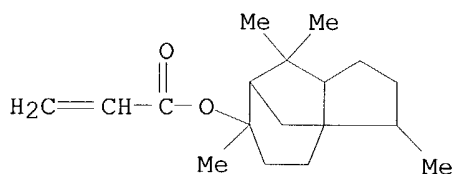
CRN 108-31-6  
 CMF C4 H2 O3



RN 398140-92-6 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
 polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl  
 2-propenoate and octahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-6-yl  
 2-propenoate (9CI) (CA INDEX NAME)

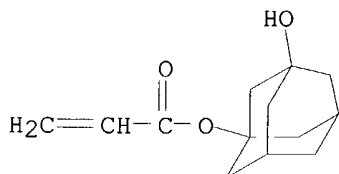
CM 1

CRN 313698-62-3  
 CMF C18 H28 O2



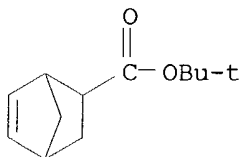
CM 2

CRN 216581-76-9  
 CMF C13 H18 O3



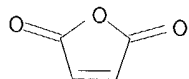
CM 3

CRN 154970-45-3  
 CMF C12 H18 O2



CM 4

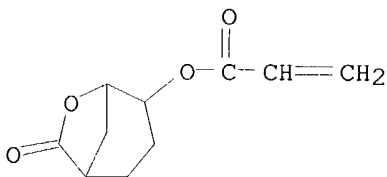
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-93-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 1,1-dimethylethyl 2-propenoate, 2,5-furandione and  
7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI) (CA INDEX NAME)

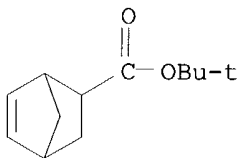
CM 1

CRN 398140-83-5  
CMF C10 H12 O4



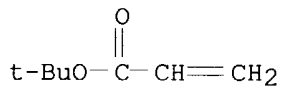
CM 2

CRN 154970-45-3  
CMF C12 H18 O2



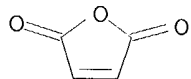
CM 3

CRN 1663-39-4  
CMF C7 H12 O2



CM 4

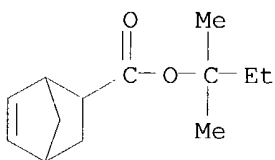
CRN 108-31-6  
CMF C4 H2 O3



RN 398140-94-8 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl  
2-propenoate, 1,1-dimethylpropyl 2-propenoate and 2,5-furandione (9CI)  
(CA INDEX NAME)

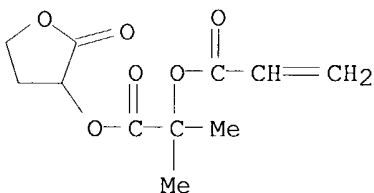
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



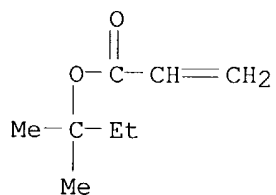
CM 2

CRN 383196-94-9  
CMF C11 H14 O6



CM 3

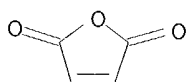
CRN 7383-26-8  
CMF C8 H14 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



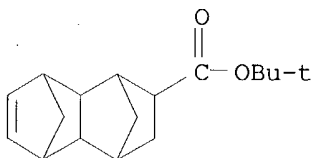
RN 398140-95-9 HCAPLUS

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethylethyl ester, polymer with 2-(2-ethoxyethoxy)ethyl 2-propenoate, ethoxymethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 195057-79-5

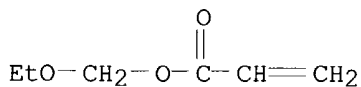
CMF C17 H24 O2



CM 2

CRN 101181-06-0

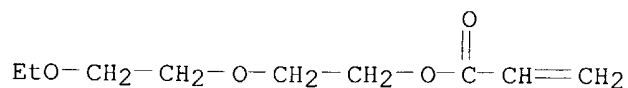
CMF C6 H10 O3



CM 3

CRN 7328-17-8

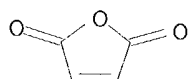
CMF C9 H16 O4



CM 4

CRN 108-31-6

CMF C4 H2 O3



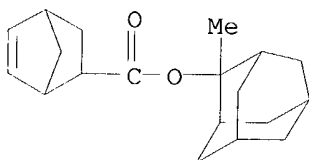
RN 398140-98-2 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and 2-methoxy-1,1-dimethylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 328087-85-0

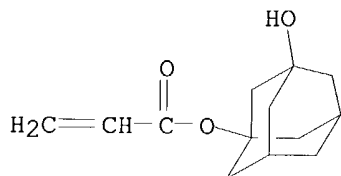
CMF C19 H26 O2



CM 2

CRN 216581-76-9

CMF C13 H18 O3

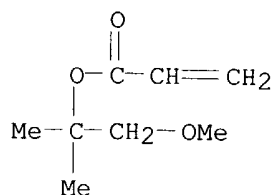


CM 3

CRN 213758-87-3



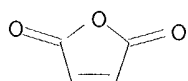
CMF C8 H14 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



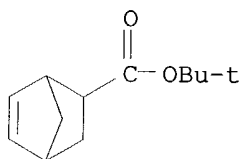
RN 398140-99-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5-yl acetate and tetrahydro-6-methoxy-2H-pyran-2-yl 2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 154970-45-3

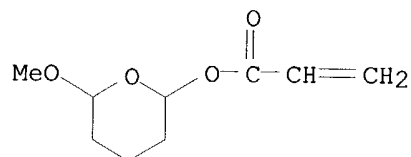
CMF C12 H18 O2



CM 2

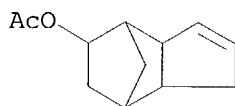
CRN 128795-96-0

CMF C9 H14 O4



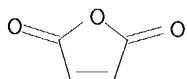
CM 3

CRN 2500-83-6  
CMF C12 H16 O2



CM 4

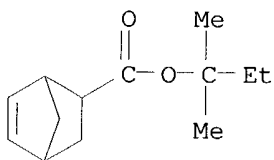
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-00-9 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and 2-methoxyethyl  
bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

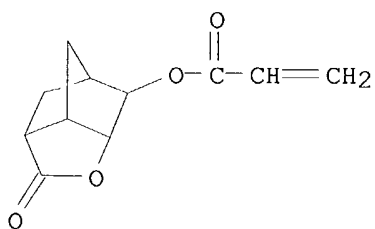
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



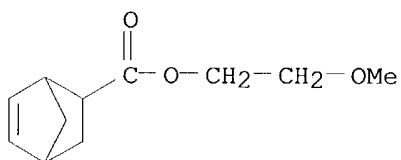
CM 2

CRN 242129-35-7  
CMF C11 H12 O4



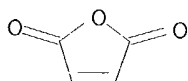
CM 3

CRN 46276-02-2  
CMF C11 H16 O3



CM 4

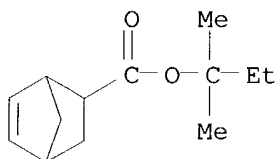
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-04-3 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and  
5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX  
NAME)

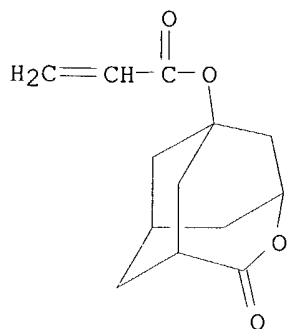
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



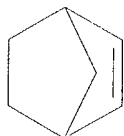
CM 2

CRN 265999-35-7  
CMF C13 H16 O4



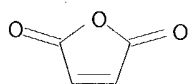
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

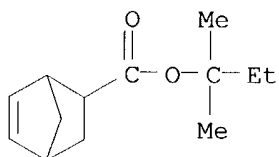
CRN 108-31-6  
CMF C4 H2 O3



RN 398141-06-5 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 2,5-furandione, N-(methylsulfonyl)-2-propenamide and  
tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

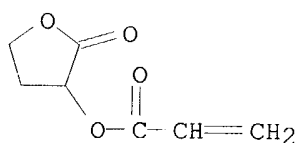
CRN 398140-58-4  
CMF C13 H20 O2



CM 2

CRN 328249-37-2

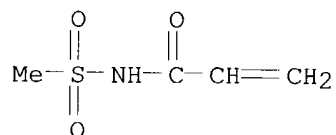
CMF C7 H8 O4



CM 3

CRN 79277-90-0

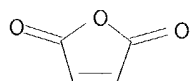
CMF C4 H7 N O3 S



CM 4

CRN 108-31-6

CMF C4 H2 O3



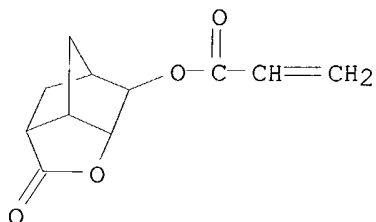
RN 398141-07-6 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 242129-35-7

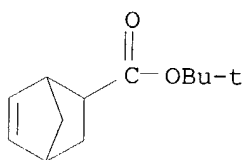
CMF C11 H12 O4



CM 2

CRN 154970-45-3

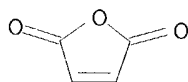
CMF C12 H18 O2



CM 3

CRN 108-31-6

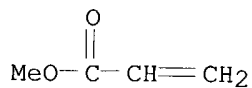
CMF C4 H2 O3



CM 4

CRN 96-33-3

CMF C4 H6 O2

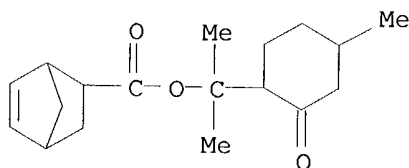


RN 398141-08-7 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl ester, polymer with 2-cyanoethyl 2-propenoate, 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

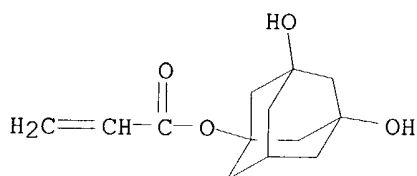
CM 1

CRN 312261-59-9  
CMF C18 H26 O3



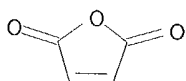
CM 2

CRN 216581-85-0  
CMF C13 H18 O4



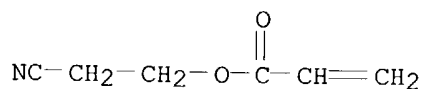
CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

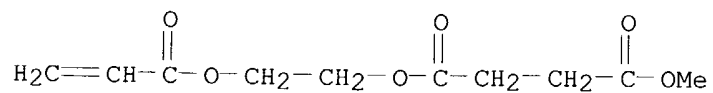
CRN 106-71-8  
CMF C6 H7 N O2



RN 398141-10-1 HCAPLUS  
CN Butanedioic acid, methyl 2-[(1-oxo-2-propenyl)oxy]ethyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 5-oxo-4-oxatricyclo[4.3.1.13,8]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

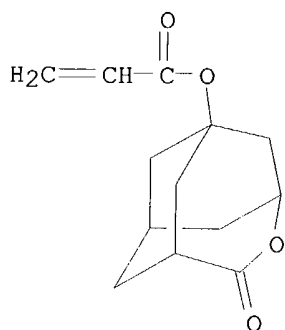
CM 1

CRN 398141-09-8  
CMF C10 H14 O6



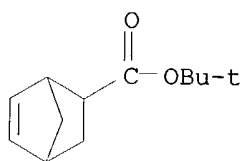
CM 2

CRN 265999-35-7  
CMF C13 H16 O4



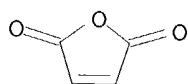
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3



RN 398141-11-2 HCAPLUS

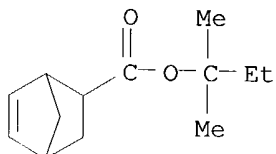


CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl  
2-propenoate and tetrahydro-5-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX  
NAME)

CM 1

CRN 398140-58-4

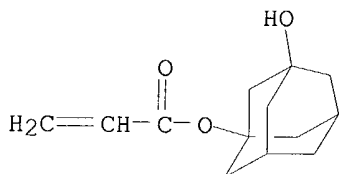
CMF C13 H20 O2



CM 2

CRN 216581-76-9

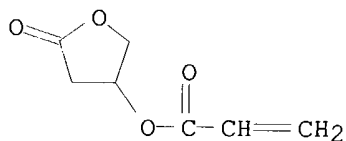
CMF C13 H18 O3



CM 3

CRN 130225-01-3

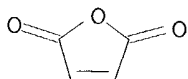
CMF C7 H8 O4



CM 4

CRN 108-31-6

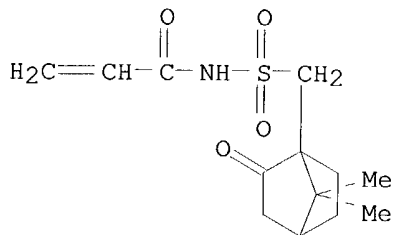
CMF C4 H2 O3



RN 398141-13-4 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
 polymer with N-[(7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl)methyl]sulfonyl]-2-propenamide, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

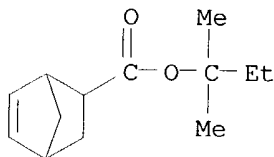
CM 1

CRN 398141-12-3  
 CMF C13 H19 N O4 S



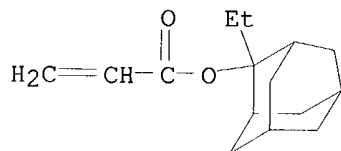
CM 2

CRN 398140-58-4  
 CMF C13 H20 O2



CM 3

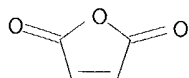
CRN 303186-14-3  
 CMF C15 H22 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



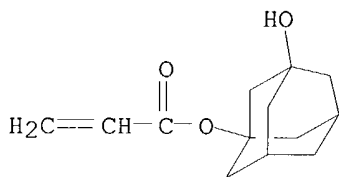
RN 398141-16-7 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate, 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate and 2-(2-methoxyethoxy)ethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 216581-76-9

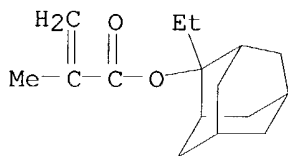
CMF C13 H18 O3



CM 2

CRN 209982-56-9

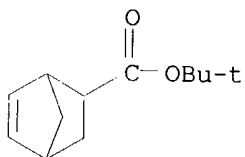
CMF C16 H24 O2



CM 3

CRN 154970-45-3

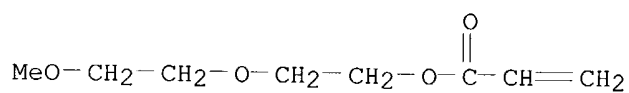
CMF C12 H18 O2



CM 4

CRN 7328-18-9

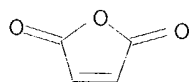
CMF C8 H14 O4



CM 5

CRN 108-31-6

CMF C4 H2 O3



RN 398152-52-8 HCAPLUS

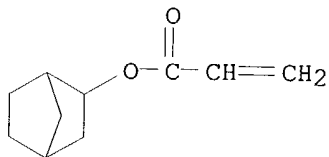
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 5(or 6)-cyanobicyclo[2.2.1]hept-2-yl 2-propenoate, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 398152-51-7

CMF C11 H13 N O2

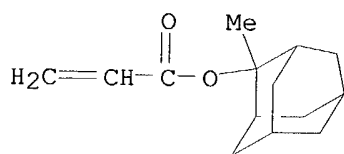
CCI IDS



D1-CN

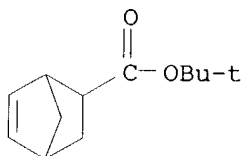
CM 2

CRN 249562-06-9  
CMF C14 H20 O2



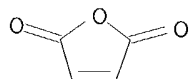
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

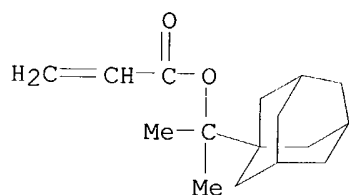
CRN 108-31-6  
CMF C4 H2 O3



RN 405509-30-0 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate, 2-methylpropyl 2-propenoate and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

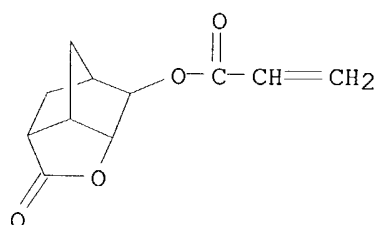
CRN 300833-10-7  
CMF C16 H24 O2



CM 2

CRN 242129-35-7

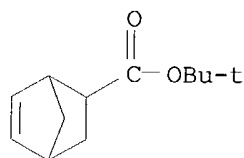
CMF C11 H12 O4



CM 3

CRN 154970-45-3

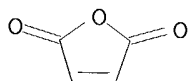
CMF C12 H18 O2



CM 4

CRN 108-31-6

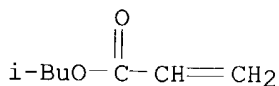
CMF C4 H2 O3



CM 5

CRN 106-63-8

CMF C7 H12 O2



L106 ANSWER 18 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:671932 HCAPLUS

DN 137:202031

TI Preparation and **patterning** process of silicon-containing chemical amplification positive resist compositions

IN Takeda, Takano; Hatakeyama, Jun; Ishihara, Toshinobu; Kubota, Tooru; Kubota, Yasufumi

PA Shin-Etsu Chemical Co., Ltd., Japan

SO Eur. Pat. Appl., 33 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1236745	A2	20020904	EP 2002-251419	20020228
	EP 1236745	A3	20040324		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002348332	A2	20021204	JP 2002-47351	20020225
	US 2002168581	A1	20021114	US 2002-85935	20020301
PRAI	JP 2001-56543	A	20010301		

AB Novel silicon-containing polymers, which are obtained by copolymerizing **vinylsilane** with a compound having a low electron d. unsatd. bond such as maleic anhydride, maleimide derivs. or tetrafluoroethylene, are suitable as the base resin in chemical amplified pos. resist comps. used for micropatterning in a process for the fabrication of semiconductor devices. The resist comps., which are sensitive to high-energy radiation, such as deep-UV light, laser beams, electron beams or X-rays, can form high aspect ratio **patterns** with high sensitivity and resolution as well as improved resistance to oxygen or halogen gas plasma etching. Thus, maleic anhydride and **trimethylvinylsilane** were polymerized in THF using radical polymerization technique; the silicone polymer, photoacid generator, dissoln. inhibitor were thoroughly dissolved in propylene glycol monomethyl **ether** acetate; the resist solution was spin coated onto cured DUV-30/novolac resist substrate and then baked at 100° for 90 s to form a resist film of 0.2 μm, followed by exposing to laser beam, baking at 100° for 90 s, and developing in TMAH to obtain a pos. **pattern**; the resist **pattern** was then evaluated in sensitivity, resolution, and etc.

IC ICM C08F030-08

ICS G03F007-075; C08G077-00

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 76

ST silicon contg chem amplification pos resist compn **patterning** process; maleimide **vinyl** polymer semiconductor device radiation sensitive resist; maleic anhydride **trimethylvinylsilane** copolymer resist device

IT Positive **photoresists**

(UV; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)

- IT Phenolic resins, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (novolak, substrate layer; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT Resists  
 (pos.-working radiation-sensitive; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT Electron beam resists  
 (pos.-working; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT Etching  
 Semiconductor device fabrication  
 (silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT Polymers, preparation  
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)  
 (silicon-containing; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 26702-38-5P, Maleic anhydride-**trimethylvinylsilane** copolymer  
 452912-28-6P, N-Methylmaleimide-**trimethylvinylsilane** copolymer  
 452912-29-7P 452912-30-0P, **Trimethylvinylsilane**-tetrafluoroethylene copolymer 452912-31-1P, Maleic anhydride-**vinylheptamethylcyclotetrasiloxane** copolymer 452912-32-2P, Maleic anhydride-bis(trimethylsilylmethyl)**vinylmethylsilane** copolymer 452912-33-3P, Maleic anhydride-**vinylheptamethylcyclotetrasiloxane**-1-ethylcyclopentyl methacrylate copolymer 452912-34-4P, Maleic anhydride-bis(trimethylsilylmethyl)**vinylmethylsilane**-1-ethylcyclopentyl methacrylate copolymer 452912-35-5P, Maleic anhydride-**vinylheptamethylcyclotetrasiloxane**-2-ethyl-2-adamantyl methacrylate copolymer 452912-65-1P, Maleic anhydride-**trimethylvinylsilane**-1-ethylcyclopentyl methacrylate copolymer  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)  
 (cured and uncured; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 409321-21-7 409321-23-9  
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (dissoln. inhibitor; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 66003-76-7 66003-78-9  
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (photoacid generator; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 84540-57-8, Propyleneglycol monomethyl **ether** acetate  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 59269-51-1, Polyhydroxystyrene  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (substrate layer; silicon-containing chemical amplification pos. resist comps. and **patterning** process thereof)
- IT 81458-41-5, OFPR-800



RL: NUU (Other use, unclassified); USES (Uses)

(substrate; silicon-containing chemical amplification pos. resist compns.

and

**patterning** process thereof)

IT 452912-33-3P, Maleic anhydride-**vinylheptamethylcyclotetrasiloxane**-1-ethylcyclopentyl methacrylate copolymer 452912-34-4P, Maleic anhydride-bis(trimethylsilylmethyl)**vinylmethylsilane**-1-ethylcyclopentyl methacrylate copolymer 452912-35-5P, Maleic anhydride-**vinylheptamethylcyclotetrasiloxane**-2-ethyl-2-adamantyl methacrylate copolymer 452912-65-1P, Maleic anhydride-**trimethylvinylsilane**-1-ethylcyclopentyl methacrylate copolymer

RL: DEV (Device component use); **IMF (Industrial manufacture)**; POF (Polymer in formulation); PRP (Properties); **PREP (Preparation)**; USES (Uses)

(cured and uncured; silicon-containing chemical amplification pos. **resist** compns. and **patterning** process thereof)

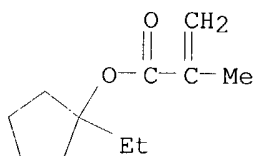
RN 452912-33-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with ethenylheptamethylcyclotetrasiloxane and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

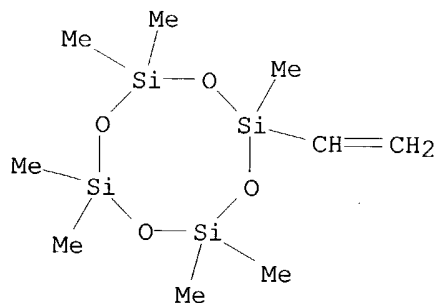
CMF C11 H18 O2



CM 2

CRN 3763-39-1

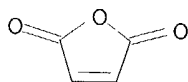
CMF C9 H24 O4 Si4



CM 3

CRN 108-31-6

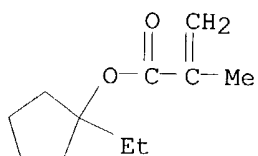
CMF C4 H2 O3



RN 452912-34-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
 ethenylmethylbis[(trimethylsilyl)methyl]silane and 2,5-furandione (9CI)  
 (CA INDEX NAME)

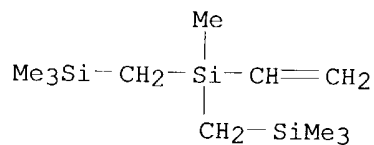
CM 1

CRN 266308-58-1  
 CMF C11 H18 O2



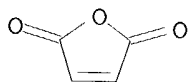
CM 2

CRN 16709-90-3  
 CMF C11 H28 Si3



CM 3

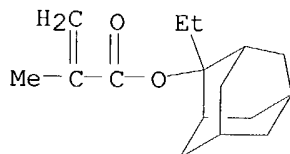
CRN 108-31-6  
 CMF C4 H2 O3



RN 452912-35-5 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with ethenylheptamethylcyclotetrasiloxane and 2,5-furandione (9CI)  
 (CA INDEX NAME)

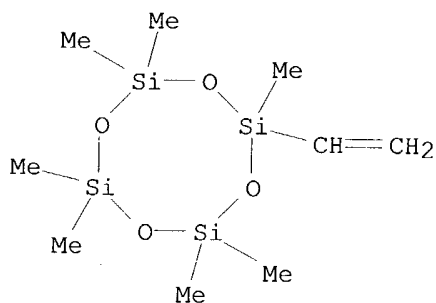
CM 1

CRN 209982-56-9  
CMF C16 H24 O2



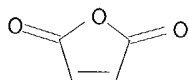
CM 2

CRN 3763-39-1  
CMF C9 H24 O4 Si4



CM 3

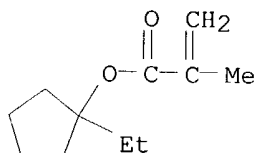
CRN 108-31-6  
CMF C4 H2 O3



RN 452912-65-1 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
ethenyltrimethylsilane and 2,5-furandione (9CI) (CA INDEX NAME)

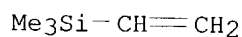
CM 1

CRN 266308-58-1  
CMF C11 H18 O2



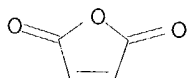
CM 2

CRN 754-05-2  
CMF C5 H12 Si



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 19 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:464504 HCAPLUS

DN 137:54614

TI Far UV-sensitive positive-working photoresist composition containing specific acid-decomposing composition

IN Sato, Kenichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 75 pp.

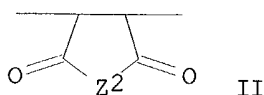
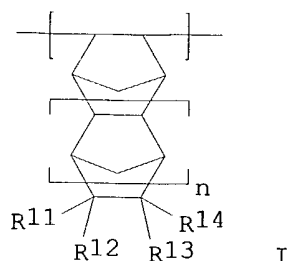
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002174901	A2	<u>20020621</u>	JP 2000-371963	20001206
PRAI	JP 2000-371963		20001206		
GI					



AB The title composition contains an actinic ray- or radiation-sensitive compound generating an acid and a resin increasing the solubility by an acid, wherein the resin containing repeating unit I ( R11-14 = H, halo, cyano, -COOH, etc.), II ( Z2 = -O-, -N(R41); R41 = H, OH, -OSO2-R42; R42 = alkyl, haloalkyl, cycloalkyl, etc.), [-CH2-C(R1a)(COO-W1-Lc)] ( R1a = H, methyl; W1 = single bond, alkylene, **ether** bond, etc.; Lc = not define), and a repeating unit chosen from a few specific groups. The composition provides the good contact hole **patterns** without depending on the contact hole **pattern d**.

IC ICM G03F007-039

ICS C08F220-18; C08F222-04; C08F232-00; C08K005-00; C08L057-00;  
G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

IT **Photoresists**

Positive **photoresists**

(far UV-sensitive; far UV-sensitive pos.-working photoresist composition)

IT 438221-16-0P 438221-17-1P 438221-18-2P

438221-19-3P 438221-20-6P 438221-21-7P

438221-22-8P 438221-23-9P 438221-24-0P

438221-25-1P 438221-28-4P 438221-29-5P

438221-30-8P 438221-31-9P 438221-34-2P

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(far UV-sensitive pos.-working **photoresist** composition)

IT 438221-16-0P 438221-17-1P 438221-18-2P

438221-19-3P 438221-20-6P 438221-21-7P

438221-23-9P 438221-24-0P 438221-25-1P

438221-28-4P 438221-29-5P 438221-30-8P

438221-31-9P 438221-34-2P

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(far UV-sensitive pos.-working **photoresist** composition)

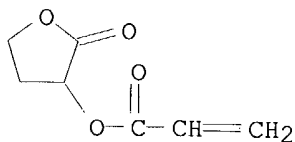
RN 438221-16-0 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 328249-37-2

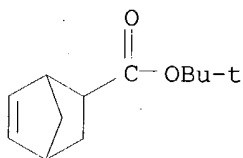
CMF C7 H8 O4



CM 2

CRN 154970-45-3

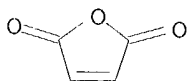
CMF C12 H18 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



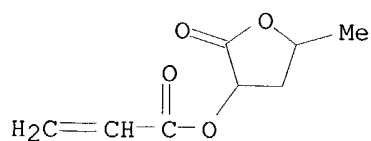
RN 438221-17-1 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-,  $\gamma$ -lactone, 2-(2-propenoate), polymer with 2,5-furandione, 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 2-methyl-N-(methylsulfonyl)-2-propenamide (9CI) (CA INDEX NAME)

CM 1

CRN 383196-92-7

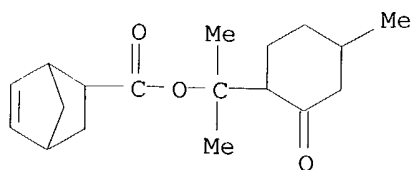
CMF C8 H10 O4



CM 2

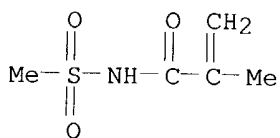
CRN 312261-59-9

CMF C18 H26 O3



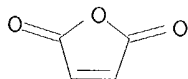
CM 3

CRN 208761-54-0  
CMF C5 H9 N O3 S



CM 4

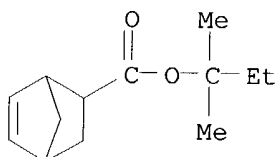
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-18-2 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 2-(2-ethoxyethoxy)ethyl 2-propenoate, 2,5-furandione and tetrahydro-5,5-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

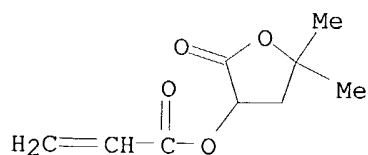
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



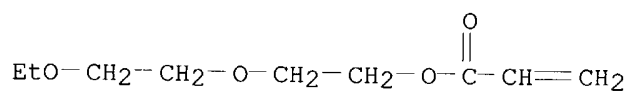
CM 2

CRN 276874-08-9  
CMF C9 H12 O4



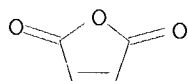
CM 3

CRN 7328-17-8  
CMF C9 H16 O4



CM 4

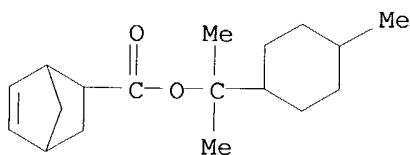
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-19-3 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methoxyethyl ester, polymer with 2,5-furandione, 1-methyl-1-(4-methylcyclohexyl)ethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

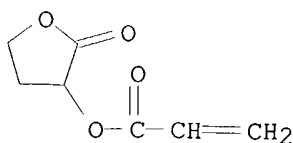
CRN 342648-12-8  
CMF C18 H28 O2



CM 2

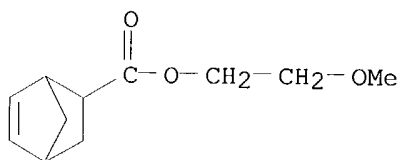


CRN 328249-37-2  
CMF C7 H8 O4



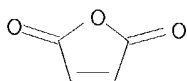
CM 3

CRN 46276-02-2  
CMF C11 H16 O3



CM 4

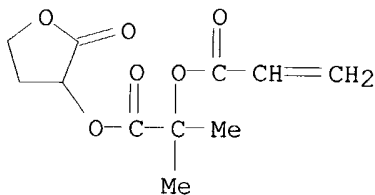
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-20-6 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl ester, polymer with 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl 2-propenoate and 2,5-furandione  
(9CI) (CA INDEX NAME)

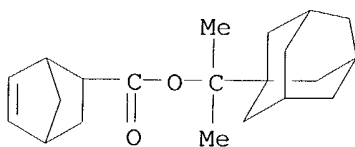
CM 1

CRN 383196-94-9  
CMF C11 H14 O6



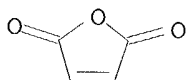
CM 2

CRN 328087-76-9  
CMF C21 H30 O2



CM 3

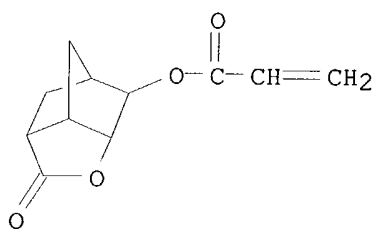
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-21-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2,5-furandione, 3a,4,5,6,7,7a-hexahydro-5-methoxy-4,7-methano-  
1H-indene and hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl  
2-propenoate (9CI) (CA INDEX NAME)

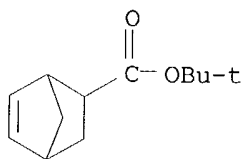
CM 1

CRN 242129-35-7  
CMF C11 H12 O4



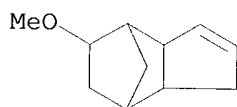
CM 2

CRN 154970-45-3  
CMF C12 H18 O2



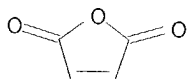
CM 3

CRN 53018-24-9  
CMF C11 H16 O



CM 4

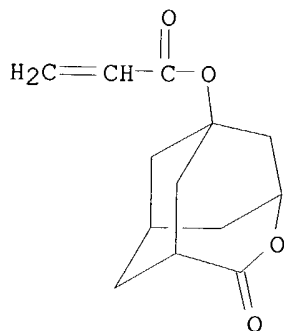
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-23-9 HCAPLUS  
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-octahydro-, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 2-(2-methoxyethoxy)ethyl 2-propenoate and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

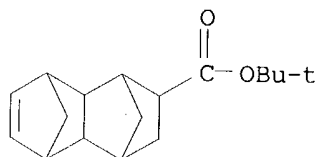
CRN 265999-35-7  
CMF C13 H16 O4



CM 2

CRN 195057-79-5

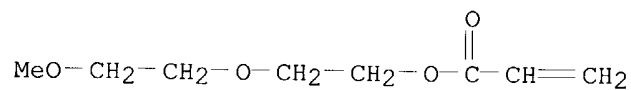
CMF C17 H24 O2



CM 3

CRN 7328-18-9

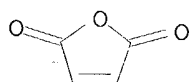
CMF C8 H14 O4



CM 4

CRN 108-31-6

CMF C4 H2 O3



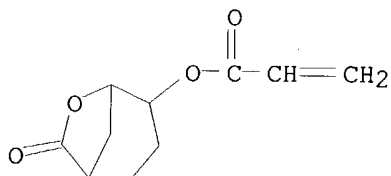
RN 438221-24-0 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione and 7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

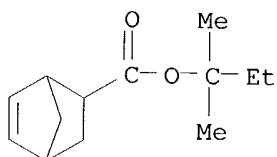
CRN 398140-83-5

CMF C10 H12 O4



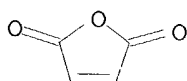
CM 2

CRN 398140-58-4  
CMF C13 H20 O2



CM 3

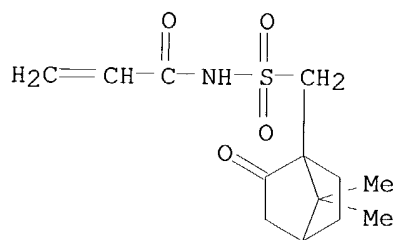
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-25-1 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with N-[[[7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl)methyl]sulfonyl]-2-propenamide, 2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

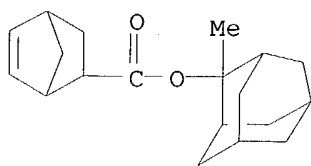
CM 1

CRN 398141-12-3  
CMF C13 H19 N O4 S



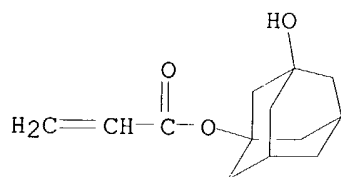
CM 2

CRN 328087-85-0  
CMF C19 H26 O2



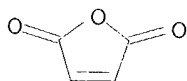
CM 3

CRN 216581-76-9  
CMF C13 H18 O3



CM 4

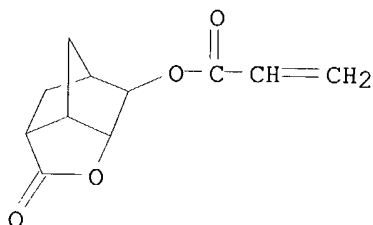
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-28-4 HCAPLUS  
CN 2-Naphthalenemethanaminium, N,N-dimethyl-N-[2-[(1-oxo-2-propenyl)oxy]ethyl]-, salt with trifluoromethanesulfonic acid (1:1), polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and tetrahydro-2H-pyran-2-yl bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

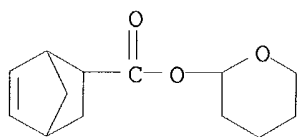
CM 1

CRN 242129-35-7  
CMF C11 H12 O4



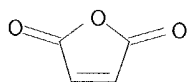
CM 2

CRN 154924-11-5  
CMF C13 H18 O3



CM 3

CRN 108-31-6  
CMF C4 H2 O3

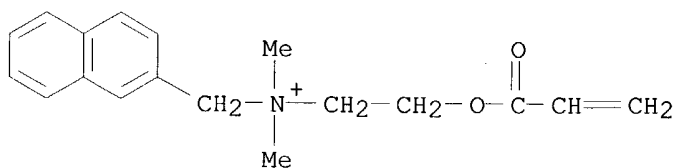


CM 4

CRN 438221-27-3  
CMF C18 H22 N O2 . C F3 O3 S

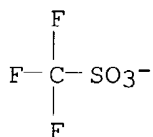
CM 5

CRN 438221-26-2  
CMF C18 H22 N O2



CM 6

CRN 37181-39-8  
CMF C F3 O3 S

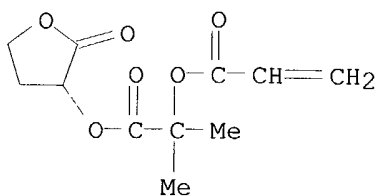


RN 438221-29-5 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
 polymer with 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate,  
 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl 2-propenoate  
 and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 383196-94-9

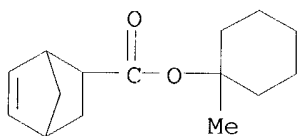
CMF C11 H14 O6



CM 2

CRN 279243-78-6

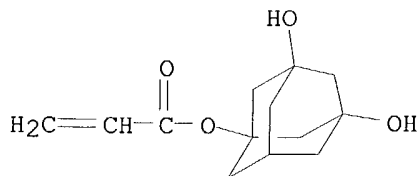
CMF C15 H22 O2



CM 3

CRN 216581-85-0

CMF C13 H18 O4

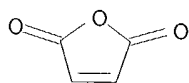


CM 4

CRN 108-31-6

CMF C4 H2 O3

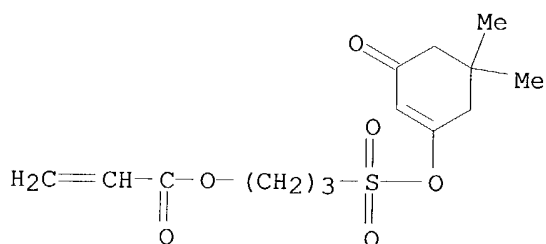




RN 438221-30-8 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
 polymer with 3-[[ (5,5-dimethyl-3-oxo-1-cyclohexen-1-yl)oxy]sulfonyl]propyl  
 2-propenoate, 2,5-furandione and hexahydro-2-oxo-3,5-methano-2H-  
 cyclopenta[b]furan-6-yl 2-propenoate (9CI) (CA INDEX NAME)

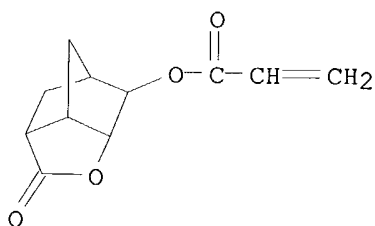
CM 1

CRN 398140-96-0  
 CMF C14 H20 O6 S



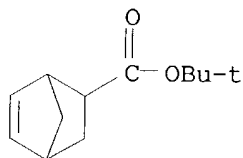
CM 2

CRN 242129-35-7  
 CMF C11 H12 O4



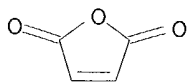
CM 3

CRN 154970-45-3  
 CMF C12 H18 O2



CM 4

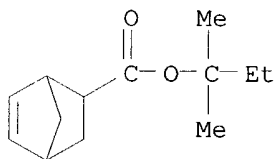
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-31-9 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 1-cyclohexyl-1H-pyrrole-2,5-dione, 2,5-furandione and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

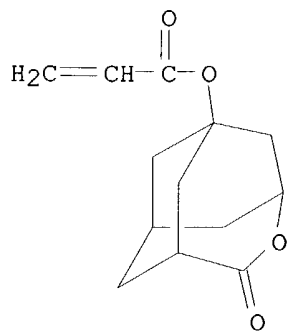
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



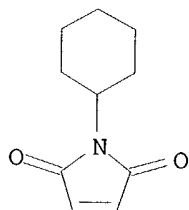
CM 2

CRN 265999-35-7  
CMF C13 H16 O4



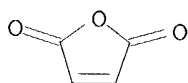
CM 3

CRN 1631-25-0  
CMF C10 H13 N O2



CM 4

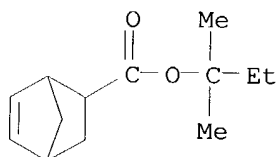
CRN 108-31-6  
CMF C4 H2 O3



RN 438221-34-2 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-  
cyclopenta[b]furan-6-yl 2-propenoate and 2-(2-methoxyethoxy)ethyl  
2-propenoate (9CI) (CA INDEX NAME)

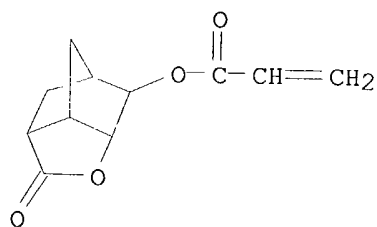
CM 1

CRN 398140-58-4  
CMF C13 H20 O2



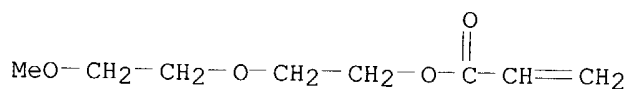
CM 2

CRN 242129-35-7  
CMF C11 H12 O4



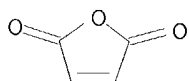
CM 3

CRN 7328-18-9  
CMF C8 H14 O4



CM 4

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 20 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:447174 HCAPLUS

DN 137:39321

TI Positively working resist composition containing fluoropolymer for high resolution

IN Adegawa, Yutaka; Tan, Shiro; Sorori, Tadaihiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 124pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002169295	A2	20020614	JP 2001-272097	20010907
PRAI	JP 2000-276896	A	20000912		
	JP 2000-283963	A	20000919		

OS MARPAT 137:39321

AB The resist composition contains (A) (a1) polymers with acid-sensitive alkali solubility, (a2) alkali-soluble polymers and low-mol-weight compds. with acid-sensitive alkali solubility (dissoln. inhibitors), or (a3) polymers with acid-sensitive alkali solubility and dissoln. inhibitors, (B) acid generator sensitive to actinic ray or radiation, and (C) polymers having

fluoroaliph. groups in side chains, where the groups are obtained from fluoroaliph. compds. manufactured by telomerization or oligomerization. Also claimed is a chemical amplified pos. resist composition sensitive to electron beam

or x-ray containing (A) acid generator and (B) alkali-soluble polymers with weight-average mol. weight  $>3000$  and  $\leq 300,000$  which satisfy the following conditions: (1) the polymers contain  $\geq 1$  of repeating unit from monomers containing C6-20 aromatic ring and ethylenically unsatd. group and (2) the aromatic ring has controlled number of  $\pi$  electrons and the substituents of the aromatic ring have controlled number of unshared electron pairs. The chemical amplified resist composition has high resolution, high line-width reproducibility, and good **pattern** profiles.

IC ICM G03F007-039

ICS C08F212-02; G03F007-004; G03F007-033; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

IT **Photoresists**

(pos. working resist composition containing fluoropolymer for high resolution)

IT 24979-70-2P, p-Hydroxystyrene homopolymer 24979-74-6P, p-Hydroxystyrene-styrene copolymer 129674-22-2P, p-tert-Butoxycarbonyloxystyrene-p-hydroxystyrene copolymer 159296-87-4P, tert-Butyl acrylate-p-hydroxystyrene copolymer 177034-67-2P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene-styrene copolymer 249562-17-2P, Maleic anhydride-2-methyl-2-adamantyl acrylate-norbornene copolymer 289706-85-0P, p-Acetoxystyrene-p-(1-benzyloxyethoxy)styrene-p-hydroxystyrene copolymer 325143-38-2P, tert-Butyl acrylate-p-(1-ethoxyethoxy)styrene-p-hydroxystyrene copolymer 436812-24-7P, p-Acetoxystyrene-p-hydroxystyrene-p-(1-phenethylethoxy)styrene copolymer

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**

(pos. working **resist** composition containing fluoropolymer for high resolution)

IT 79-10-7D, Acrylic acid, fluoroalkyl esters, polymers with (meth)acrylates 79-41-4D, Methacrylic acid, fluoroalkyl esters, polymers with (meth)acrylates 80-62-6D, Methyl methacrylate, polymers with fluoroalkyl (meth)acrylates, 2-hydroxyethyl methacrylate, and iso-Bu methacrylate 97-86-9D, polymers with fluoroalkyl (meth)acrylates, Me methacrylate, and 2-hydroxyethyl methacrylate 101-68-8D, polymers with fluoroalkyl (meth)acrylates, isocyanates, and diols 110-63-4D, 1,4-Butanediol, polymers with fluoroalkyl (meth)acrylates, isocyanates, and diols 142-90-5D, polymers with fluoroalkyl (meth)acrylates and 2-Propenamide, N-[4-[(2,6-dimethylphenyl)amino]sulfonyl]phenyl]- 822-06-0D, 1,6-Hexamethylene diisocyanate, polymers with fluoroalkyl (meth)acrylates, isocyanates, and diols 868-77-9D, 2-Hydroxyethyl methacrylate, polymers with fluoroalkyl (meth)acrylates, Me methacrylate, and iso-Bu methacrylate 7398-56-3D, polymers with fluoroalkyl (meth)acrylates, Me methacrylate, and 2-hydroxyethyl acrylate 10097-02-6D, polymers with fluoroalkyl (meth)acrylates, isocyanates, and diols 26915-72-0D, polymers with fluoroalkyl (meth)acrylates and polypropylene glycol methacrylate Me **ether** 31958-47-1D, polymers with fluoroalkyl poly[(2-hydroxy-5-methyl-m-phenylene)methylene] derivs. 32171-39-4D, polymers with fluoroalkyl meth(acrylates) 83844-54-6D, polymers with fluoroalkyl (meth)acrylates and polyethylene glycol methacrylate Me **ether** 84836-10-2D, fluoroalkyl derivs., polymer with (meth)acrylates, isocyanates, and diols 114654-22-7D, polymers with fluoroalkyl (meth)acrylates 206281-34-7, Megafac F 470 232945-66-3,

Megafac F 178K 251098-95-0D, polymers with fluoroalkyl (meth)acrylates and dodecyl methacrylate 299190-83-3, Megafac F 472 402944-02-9, Megafac F 473 402944-04-1, Megafac F 475 402944-08-5, Megafac F 476  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(pos. working resist composition containing fluoropolymer for high resolution)

IT **249562-17-2P**, Maleic anhydride-2-methyl-2-adamantyl acrylate-norbornene copolymer

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos. working **resist** composition containing fluoropolymer for high resolution)

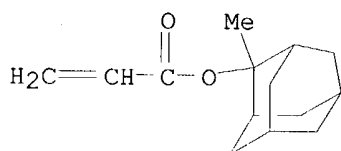
RN 249562-17-2 HCAPLUS

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

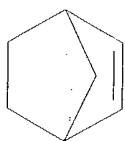
CMF C14 H20 O2



CM 2

CRN 498-66-8

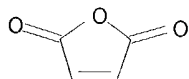
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3

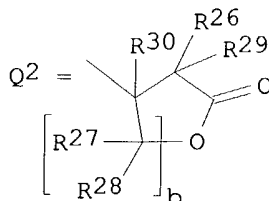
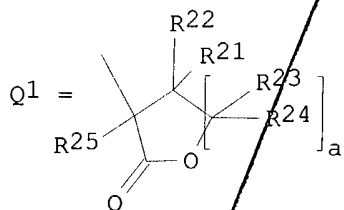
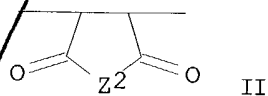
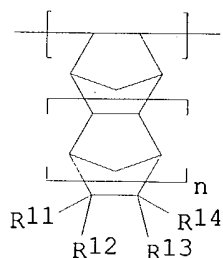


L106 ANSWER 21 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

AN 2002:447173 HCAPLUS  
 DN 137:39320  
 TI Positively working photoresist composition for exposure to ultraviolet ray  
 IN Sato, Kenichiro  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 71 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002169293	A2	20020614	JP 2000-370232	20001205
PRAI	JP 2000-370232		20001205		
GI					



AB The photoresist composition contains (A) acid generator and (B) alkali-developable polymer containing repeating units I [R11-14 = acid-decomposable group, H, halo, cyano, COOH, COOR15, C(:O)XAR16, (substituted) alkyl or cyclic hydrocarbyl;  $\geq 1$  of R11-14 is acid-decomposable group; R11-14 may form ring; n = 0, 1; R15 = (substituted) alkyl, cyclic hydrocarbyl, Y; X = O, S, NH, NHSO2, NHSO2NH; A = none, (cyclo)alkylene, (thio)ether, CO, COO, or their combination; R16 = COOH, COOR15, CN, OH, (substituted) alkoxy, CONHR17, CONHSO2R17, Y; R17 = (substituted) alkyl, cyclic hydrocarbyl; Y = Q1 or Q2; R21-R30 = H, (substituted) alkyl; a, b = 1, 2], II (Z2 = O, NR41; R41 = H, OH, OSO2R42; R42 = alkyl, haloalkyl, cycloalkyl, camphor residue), and -CH2CR51(BCOOR52)- (R51 = H, lower alkyl, halo, CN; B = none, connecting group; R52 = C6-20 aliphatic tertiary hydrocarbyl). The photoresist composition has large defocus latitude and low roughness on side walls of contact hole **patterns**.

IC ICM G03F007-039

ICS C08K005-00; C08L033-04; C08L035-00; C08L045-00; G03F007-004;  
H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38

IT Positive **photoresists**  
(pos. working photoresist composition for UV ray exposure for large defocus  
latitude and low roughness on side wall of contact hole)

IT 437610-07-6P 437610-08-7P 437610-09-8P 437610-10-1P  
437610-12-3P 437610-13-4P 437610-14-5P  
437610-15-6P 437610-16-7P 437610-17-8P  
437610-18-9P 437610-19-0P 437610-20-3P 437610-21-4P  
437610-22-5P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
material use); **PREP (Preparation)**; **USES (Uses)**  
(pos. working **photoresist** composition for UV ray exposure for  
large defocus latitude and low roughness on side wall of contact hole)

IT 437610-08-7P 437610-09-8P 437610-12-3P  
437610-13-4P 437610-14-5P 437610-15-6P  
437610-16-7P 437610-18-9P 437610-19-0P  
437610-22-5P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered  
material use); **PREP (Preparation)**; **USES (Uses)**  
(pos. working **photoresist** composition for UV ray exposure for  
large defocus latitude and low roughness on side wall of contact hole)

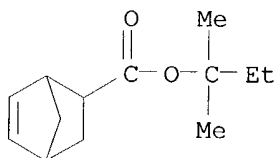
RN 437610-08-7 HCAPLUS

CN Pentonic acid, 3,5-dideoxy-,  $\gamma$ -lactone, 2-(2-propenoate), polymer  
with 1,1-dimethylpropyl bicyclo[2.2.1]hept-5-ene-2-carboxylate,  
2,5-furandione and 1-methyl-1-(4-methylcyclohexyl)ethyl 2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 398140-58-4

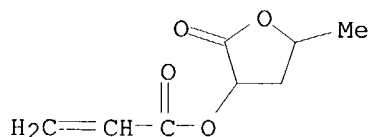
CMF C13 H20 O2



CM 2

CRN 383196-92-7

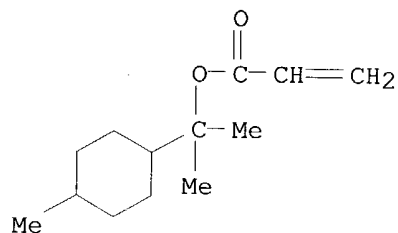
CMF C8 H10 O4





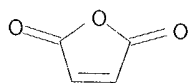
CM 3

CRN 342648-11-7  
CMF C13 H22 O2



CM 4

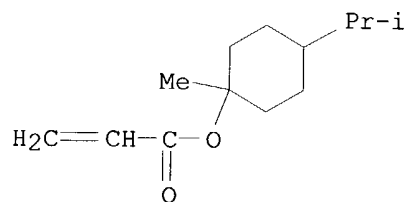
CRN 108-31-6  
CMF C4 H2 O3



RN 437610-09-8 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl 2-propenoate and 1-methyl-4-(1-methylethyl)cyclohexyl 2-propenoate (9CI) (CA INDEX NAME)

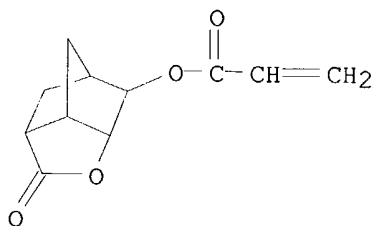
CM 1

CRN 406722-70-1  
CMF C13 H22 O2



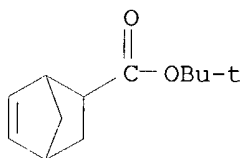
CM 2

CRN 242129-35-7  
CMF C11 H12 O4



CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3

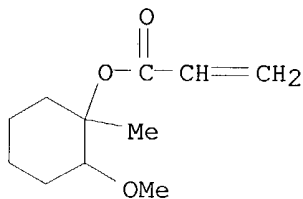


RN 437610-12-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl ester, polymer with 2,5-furandione, 2-methoxy-1-methylcyclohexyl 2-propenoate and 7-oxo-6-oxabicyclo[3.2.1]oct-4-yl 2-propenoate (9CI) (CA INDEX NAME)

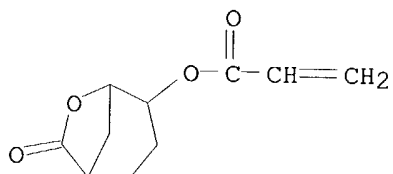
CM 1

CRN 437610-11-2  
CMF C11 H18 O3



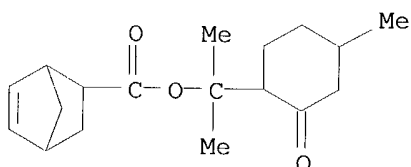
CM 2

CRN 398140-83-5  
CMF C10 H12 O4



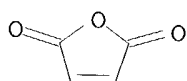
CM 3

CRN 312261-59-9  
CMF C18 H26 O3



CM 4

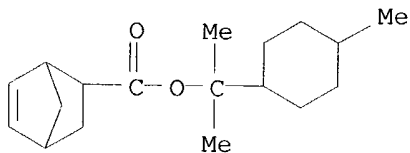
CRN 108-31-6  
CMF C4 H2 O3



RN 437610-13-4 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-(4-methylcyclohexyl)ethyl ester, polymer with 2,5-furandione, 1-methylcyclopentyl 2-propenoate and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

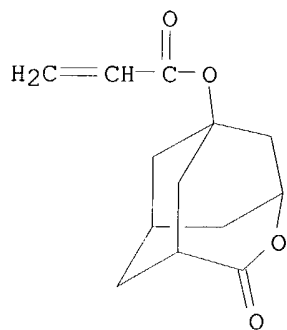
CRN 342648-12-8  
CMF C18 H28 O2



CM 2

CRN 265999-35-7

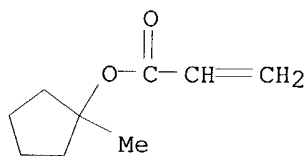
CMF C13 H16 O4



CM 3

CRN 178889-49-1

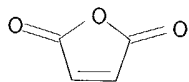
CMF C9 H14 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



RN 437610-14-5 HCAPLUS

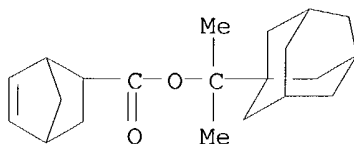
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methyl-1-

tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl ester, polymer with 2-(2-ethoxyethoxy)ethyl 2-propenoate, 2,5-furandione and octahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-6-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 328087-76-9

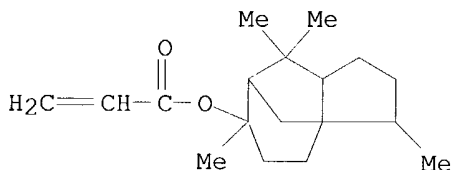
CMF C21 H30 O2



CM 2

CRN 313698-62-3

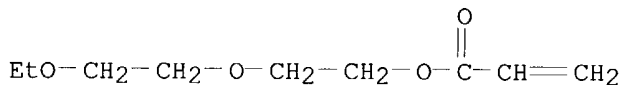
CMF C18 H28 O2



CM 3

CRN 7328-17-8

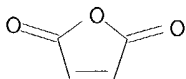
CMF C9 H16 O4



CM 4

CRN 108-31-6

CMF C4 H2 O3



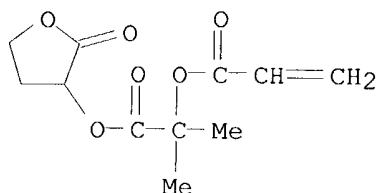
RN 437610-15-6 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, tetrahydro-2H-pyran-2-yl ester, polymer with 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-

furanyl)oxy]ethyl 2-propenoate, 2,5-furandione and 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl 2-propenoate (9CI) (CA INDEX NAME)

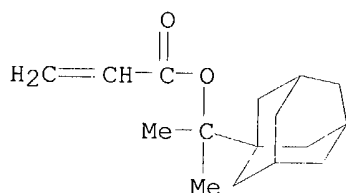
CM 1

CRN 383196-94-9  
CMF C11 H14 O6



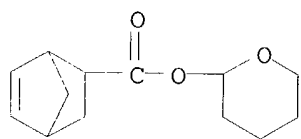
CM 2

CRN 300833-10-7  
CMF C16 H24 O2



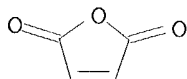
CM 3

CRN 154924-11-5  
CMF C13 H18 O3



CM 4

CRN 108-31-6  
CMF C4 H2 O3

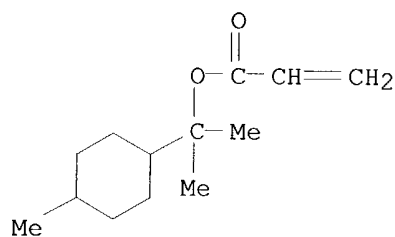


RN 437610-16-7 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
 polymer with 2,5-furandione, 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl  
 2-propenoate and 1-methyl-1-(4-methylcyclohexyl)ethyl 2-propenoate (9CI)  
 (CA INDEX NAME)

CM 1

CRN 342648-11-7

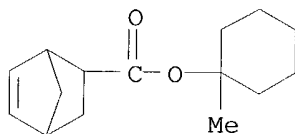
CMF C13 H22 O2



CM 2

CRN 279243-78-6

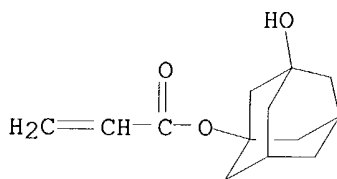
CMF C15 H22 O2



CM 3

CRN 216581-76-9

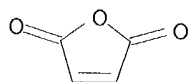
CMF C13 H18 O3



CM 4

CRN 108-31-6

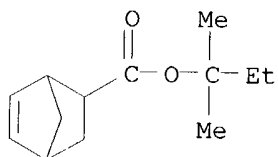
CMF C4 H2 O3



RN 437610-18-9 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
 polymer with 3,5-dihydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate,  
 2,5-furandione and 1-methylcyclohexyl 2-propenoate (9CI) (CA INDEX NAME)

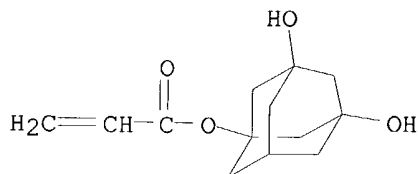
CM 1

CRN 398140-58-4  
 CMF C13 H20 O2



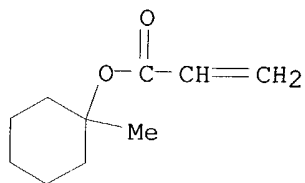
CM 2

CRN 216581-85-0  
 CMF C13 H18 O4



CM 3

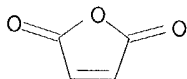
CRN 178889-47-9  
 CMF C10 H16 O2





CM 4

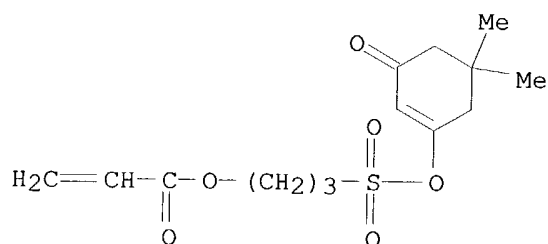
CRN 108-31-6  
CMF C4 H2 O3



RN 437610-19-0 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester,  
polymer with 3-[[ (5,5-dimethyl-3-oxo-1-cyclohexen-1-yl)oxy]sulfonyl]propyl  
2-propenoate, 2,5-furandione and 2-methylbicyclo[2.2.1]hept-2-yl  
2-propenoate (9CI) (CA INDEX NAME)

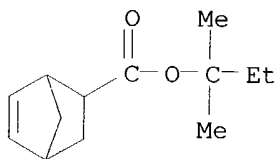
CM 1

CRN 398140-96-0  
CMF C14 H20 O6 S



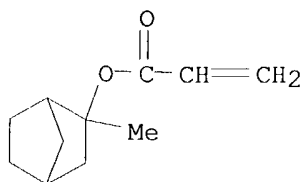
CM 2

CRN 398140-58-4  
CMF C13 H20 O2



CM 3

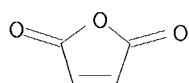
CRN 328087-78-1  
CMF C11 H16 O2



CM 4

CRN 108-31-6

CMF C4 H2 O3



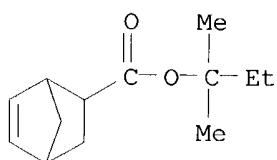
RN 437610-22-5 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, 1-(1-methylethyl)-1H-pyrrole-2,5-dione, 1-methyl-1-(4-methyl-2-oxocyclohexyl)ethyl 2-propenoate and 5-oxo-4-oxatricyclo[4.3.1.1<sup>3,8</sup>]undec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 398140-58-4

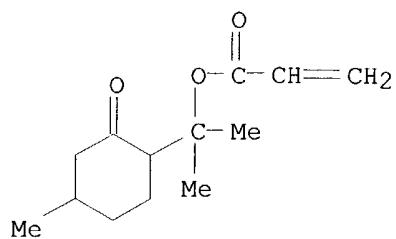
CMF C13 H20 O2



CM 2

CRN 312261-57-7

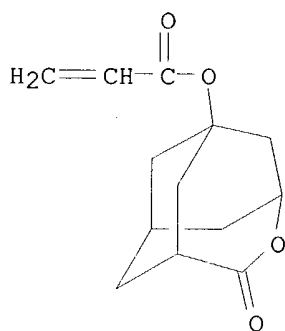
CMF C13 H20 O3



CM 3

CRN 265999-35-7

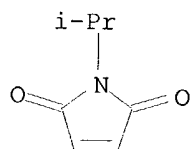
CMF C13 H16 O4



CM 4

CRN 1073-93-4

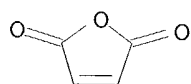
CMF C7 H9 N O2



CM 5

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 22 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:392162 HCAPLUS  
 DN 136:409022  
 TI Positive resist composition  
 IN Aoi, Toshiaki; Yasunami, Shoichiro; Mizutani, Kazuyoshi; Kanna, Shinichi  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 56 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002061464	A1	20020523	US 2001-961281	20010925
	JP 2002333715	A2	20021122	JP 2001-202298	20010703
	TW 528931	B	20030421	TW 2001-90123599	20010925
PRAI	JP 2000-292537	A	20000926		
	JP 2000-379284	A	20001213		
	JP 2001-62158	A	20010306		
	JP 2001-202298	A	20010703		
AB	The present invention relates to a pos. resist composition comprising: (A) a fluorine group-containing resin having at least one fluorine atom on at least one of the main chain and the side chain of the polymer skeleton; and having a group capable of decomposing under the action of an acid to increase the solubility in an alkali developer; (B) a compound capable of generating an acid upon irradiation with one of actinic ray and radiation; and (C) a surfactant containing at least one of a silicon atom and a fluorine atom. The present invention provides a pos. photoresist composition suitable for use in the microlithog. process in the production of VLSI or high-capacity microchip, or in other photo-fabrication processes. The invention pos. photoresist composition is capable of forming a highly definite <b>pattern</b> using a vacuum UV ray of < 160 nm.				
IC	ICM G03F007-004				
NCL	430270100				
CC	74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes) Section cross-reference(s): 35, 38, 76				
IT	Positive <b>photoresists</b> (fluorine group-containing resin for pos. resist composition)				
IT	262617-13-0P	430436-66-1P	430436-67-2P	430436-68-3P	430436-70-7P
	430436-72-9P	430436-74-1P	430436-76-3P	<b>430436-78-5P</b>	
	430436-79-6P	430436-81-0P	430436-82-1P	430436-84-3P	430436-85-4P
	430436-86-5P	430436-87-6P	430436-89-8P	430436-90-1P	430436-91-2P
	430436-92-3P	430436-94-5P	430436-95-6P	430436-97-8P	430436-98-9P
	430436-99-0P	430437-01-7P	430437-03-9P	430437-04-0P	430437-05-1P
	430437-07-3P	430437-09-5P	430437-11-9P	430437-12-0P	430437-13-1P
	430437-14-2P	430437-15-3P	430437-17-5P	430437-18-6P	430437-19-7P
	430437-21-1P	430437-22-2P	430437-24-4P	430437-26-6P	430437-27-7P
	430437-29-9P	430437-30-2P	430437-32-4P	430437-33-5P	430437-34-6P
	430437-35-7P	430437-36-8P	430437-37-9P	430437-38-0P	430437-39-1P
	430437-40-4P	430437-42-6P	430437-44-8P	430437-46-0P	431062-12-3P
	431062-14-5P	431062-16-7P	431062-17-8P	431062-18-9P	431062-20-3P
	431062-22-5P	431062-24-7P	431062-25-8P		
RL:	PRP (Properties); <b>SPN (Synthetic preparation)</b> ; TEM (Technical or engineered material use); <b>PREP (Preparation)</b> ; USES (Uses) (fluorine group-containing resin for pos. <b>resist</b> composition)				
IT	9016-45-9, Polyoxyethylene nonylphenyl <b>ether</b> 137462-24-9,				

Megafac F176 216679-67-3, Megafac R08

RL: TEM (Technical or engineered material use); USES (Uses)

(surfactant; fluorine group-containing pos. resist composition containing)

IT 430436-78-5P

RL: PRP (Properties); SPN (Synthetic preparation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)

(fluorine group-containing resin for pos. resist composition)

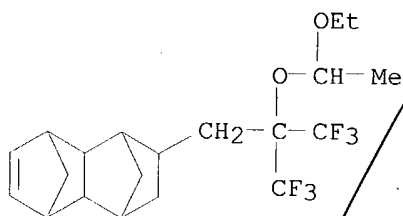
RN 430436-78-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-5,5-dimethyl-2-oxo-3-furanyl ester, polymer with 2-[2-(1-ethoxyethoxy)-3,3,3-trifluoro-2-(trifluoromethyl)propyl]-1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 430436-77-4

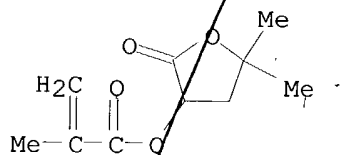
CMF C20 H26 F6 O2



CM 2

CRN 280552-09-2

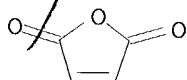
CMF C10 H14 O4



CM 3

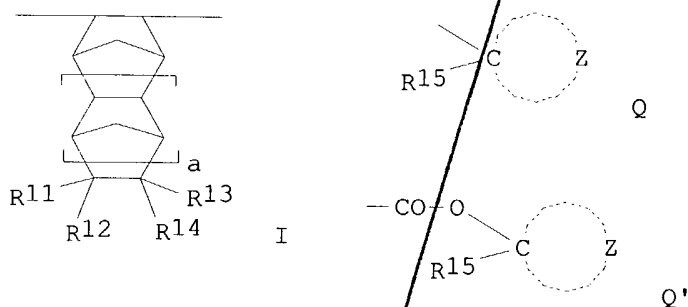
CRN 108-31-6

CMF C4 H2 O3



AN 2002:347848 HCAPLUS  
 DN 136:361828  
 TI Positive-working photoresist compositions containing norbornene-acrylate copolymers  
 IN Sato, Kenichiro; Nakao, Hajime  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 80 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

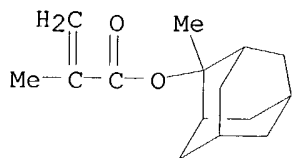
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002131917	A2	20020509	JP 2001-169802	20010605
PRAI	JP 2000-174037	A	20000609		
	JP 2000-186431	A	20000621		
	JP 2000-206812	A	20000707		
	JP 2000-206890	A	20000707		
	JP 2000-211414	A	20000712		
	JP 2000-215441	A	20000717		
	JP 2000-248658	A	20000818		
OS	MARPAT 136:361828				
GI					



AB The compns., which show wide defocus latitude, reduced line edge roughness, and high resolution, contain (A) resin which increases its solubility in alkaline developers upon reaction of acids and contain (a) a repeating unit I [R11-R14 = H, (un)substituted alkyl; a = 0, 1] and (b) CH<sub>2</sub>CR<sub>1</sub>(ACO<sub>2</sub>W) (R<sub>1</sub> = H, Me; A = direct bond, alkylene, cycloalkylene, O, **ether** group, thioether group, O, ester group; W = Q, CR<sub>16</sub>R<sub>17</sub>R<sub>18</sub>, CHR<sub>20</sub>OR<sub>19</sub>, CR<sub>23</sub>R<sub>25</sub>CR<sub>21</sub>:CR<sub>22</sub>R<sub>24</sub>, R<sub>26</sub>R<sub>29</sub>CHR<sub>27</sub>COR<sub>28</sub>, Q<sub>1</sub>; R<sub>15</sub> = Me, Et, Pr, CHMe<sub>2</sub>, Bu, CH<sub>2</sub>CMe<sub>2</sub>, CHMeEt; Z = atomic group required to form an alicyclic ring; R<sub>16</sub>-R<sub>20</sub> = C<sub>1</sub>-4 linear or branched alkyl, alicyclyl; ≥1 of R<sub>16</sub>-R<sub>18</sub>, R<sub>19</sub> or R<sub>20</sub> = alicyclyl; R<sub>21</sub>-R<sub>25</sub> = H, C<sub>1</sub>-4 linear or branched alkyl, alicyclyl; ≥1 R<sub>21</sub>-R<sub>25</sub> = alicyclyl; R<sub>23</sub> or R<sub>25</sub> = C<sub>1</sub>-4 linear or branched alkyl, alicyclyl; R<sub>26</sub>-R<sub>29</sub> = C<sub>1</sub>-4 linear or branched alkyl, alicyclyl; ≥1 of R<sub>26</sub>-R<sub>29</sub> = alicyclyl), (B) compds. which generate acids upon irradiation of actinic ray or radiation, and optionally (C<sub>1</sub>) R[X(CR<sub>51</sub>CR<sub>52</sub>)qCO<sub>2</sub>R<sub>1</sub>]<sub>n</sub> (X = O, S, NR<sub>53</sub>, direct bond, R<sub>53</sub> = H, alkyl; CO<sub>2</sub>R<sub>1</sub> = acid-decomposable group; R = n-valent bridged hydrocarbon ring, saturated cyclic hydrocarbon ring, naphthalene ring; n = 1-4; q = 0-10), (C<sub>2</sub>) naphthalene derivs. II (R<sub>60</sub> = alkyl, halo; OR<sub>61</sub> = acid-decomposable group; m = 0-4; p = 1-4), or (C<sub>3</sub>) steroid compds. which contain ≥2 substituents having ≥1

carboxyl group protected with acid-labile group. The acid generators may be imide sulfonate compds. or diazodisulfonic acids (Markush structures are given) and optionally sulfonium salts. (C1)-(C3) work as dissoln. inhibitors and the compns. give high-resolution contact hole and trench **patterns** in fabrication of semiconductor devices.

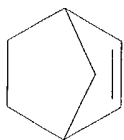
- IC ICM G03F007-039  
ICS C08F232-08; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Positive **photoresists**  
(pos.-working photoresist compns. containing norbornene-acrylate copolymers)
- IT **249562-07-0P 249562-17-2P**, Maleic anhydride-2-methyl-2-adamantyl acrylate-norbornene copolymer 260448-02-0P, tert-Butyl acrylate-maleic anhydride-norbornene copolymer 351867-96-4P  
**421555-57-9P 421555-59-1P 421555-60-4P**  
**421555-61-5P 421555-62-6P 421555-63-7P**  
**421555-64-8P 421555-65-9P 421555-66-0P**  
421555-67-1P  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(pos.-working **photoresist** compns. containing norbornene-acrylate copolymers)
- IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 110-43-0, 2-Heptanone 123-86-4, Butyl acetate 763-69-9 1320-67-8, Propylene glycol monomethyl **ether** 84540-57-8, Propylene glycol monomethyl **ether** acetate 98516-33-7, Propylene glycol monomethyl **ether** propionate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(solvent; pos.-working photoresist compns. containing norbornene-acrylate copolymers)
- IT **249562-07-0P 249562-17-2P**, Maleic anhydride-2-methyl-2-adamantyl acrylate-norbornene copolymer **421555-57-9P**  
**421555-60-4P 421555-61-5P 421555-62-6P**  
**421555-63-7P 421555-64-8P 421555-65-9P**  
**421555-66-0P**  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(pos.-working **photoresist** compns. containing norbornene-acrylate copolymers)
- RN 249562-07-0 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)
- CM 1
- CRN 177080-67-0  
CMF C15 H22 O2



CM 2

CRN 498-66-8

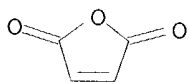
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



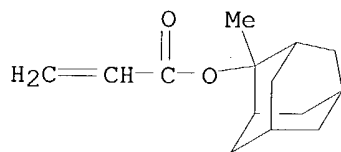
RN 249562-17-2 HCAPLUS

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

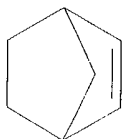
CMF C14 H20 O2



CM 2

CRN 498-66-8

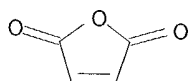
CMF C7 H10





CM 3

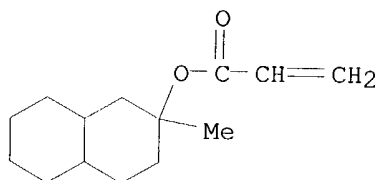
CRN 108-31-6  
CMF C4 H2 O3



RN 421555-57-9 HCAPLUS  
CN 2-Propenoic acid, decahydro-2-methyl-2-naphthalenyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

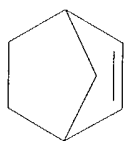
CM 1

CRN 391613-79-9  
CMF C14 H22 O2



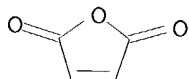
CM 2

CRN 498-66-8  
CMF C7 H10



CM 3

CRN 108-31-6  
CMF C4 H2 O3



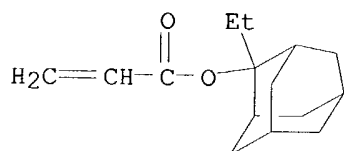
RN 421555-60-4 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with

bicyclo[2.2.1]hept-2-ene, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate  
and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 303186-14-3

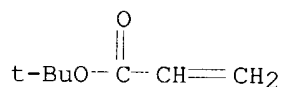
CMF C15 H22 O2



CM 2

CRN 1663-39-4

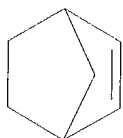
CMF C7 H12 O2



CM 3

CRN 498-66-8

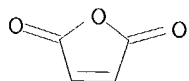
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3

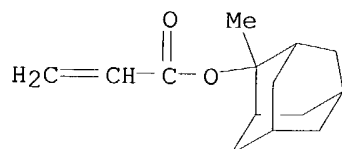


RN 421555-61-5 HCAPLUS

CN 2-Propenoic acid, 2-methoxyethyl ester, polymer with 2,5-furandione,  
2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and 1,2,3,4,4a,5,8,8a-  
octahydro-1,4:5,8-dimethanonaphthalene (9CI) (CA INDEX NAME)

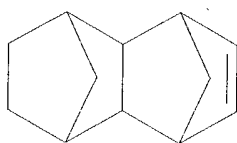
CM 1

CRN 249562-06-9  
CMF C14 H20 O2



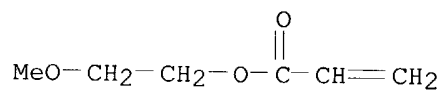
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CRN 21635-90-5  
CMF C12 H16



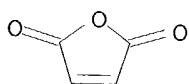
CM 3

CRN 3121-61-7  
CMF C6 H10 O3



CM 4

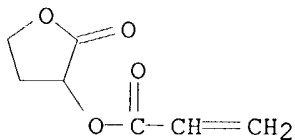
CRN 108-31-6  
CMF C4 H2 O3



RN 421555-62-6 HCAPLUS  
CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

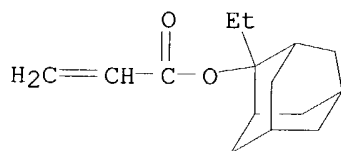
CM 1

CRN 328249-37-2  
CMF C7 H8 O4



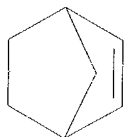
CM 2

CRN 303186-14-3  
CMF C15 H22 O2



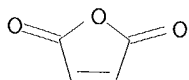
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

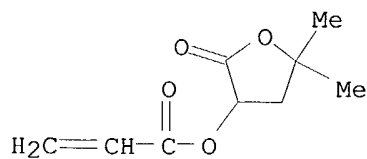
CRN 108-31-6  
CMF C4 H2 O3



RN 421555-63-7 HCAPLUS  
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-5,5-dimethyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

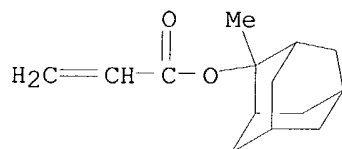
CM 1

CRN 276874-08-9  
CMF C9 H12 O4



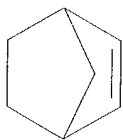
CM 2

CRN 249562-06-9  
CMF C14 H20 O2



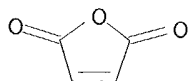
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

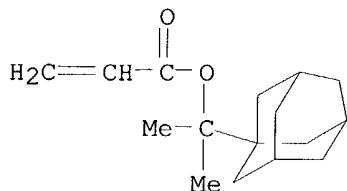
CRN 108-31-6  
CMF C4 H2 O3



RN 421555-64-8 HCAPLUS  
CN 2-Propenoic acid, 1-methyl-1-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl ester,  
polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and  
tetrahydro-5-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

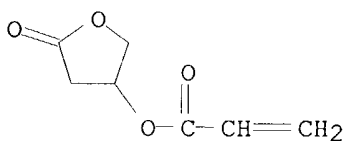
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CRN 300833-10-7  
CMF C16 H24 O2



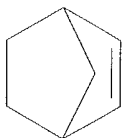
CM 2

CRN 130225-01-3  
CMF C7 H8 O4



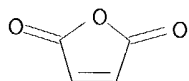
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3

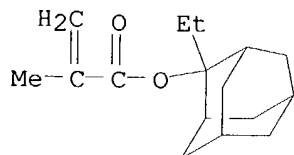


RN 421555-65-9 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX  
NAME)

CM 1

CRN 209982-56-9

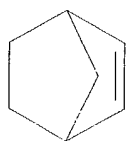
CMF C16 H24 O2



CM 2

CRN 498-66-8

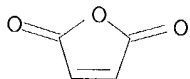
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



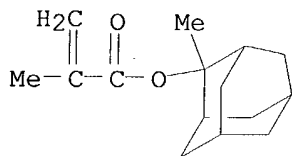
RN 421555-66-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, butyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

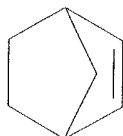
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CMF C15 H22 O2



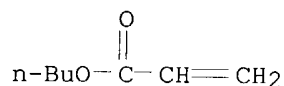
CM 2

CRN 498-66-8  
CMF C7 H10



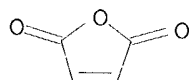
CM 3

CRN 141-32-2  
CMF C7 H12 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 24 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:315396 HCAPLUS

DN 136:332786

TI Polymers, resist compositions and **patterning** process

IN Harada, Yuji; Hatakeyama, Jun; Watanabe, Jun; Kawai, Yoshio; Sasago, Masaru; Endo, Masayuki; Kishimura, Shinji; Ootani, Michitaka; Miyazawa, Satoru; Tsutsumi, Kentaro; Maeda, Kazuhiko

PA Shin-Etsu Chemical Co., Ltd., Japan; Matsushita Electrical Industrial Co., Ltd.; Central Glass Co., Ltd.

SO U.S. Pat. Appl. Publ., 20 pp.

CODEN: USXXCO

DT Patent

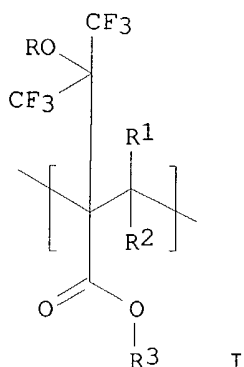
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002048724	A1	20020425	US 2001-947764	20010907
	US <u>6511787</u>	B2	20030128		
	JP 2002155112	A2	20020528	JP 2001-266846	20010904



PRAI JP 2000-271234 A 20000907  
GI



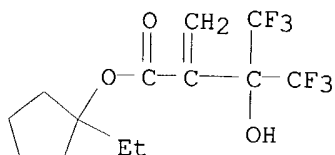
- AB The present invention relates to an acrylic resin I (R = H, acid labile group, alkyl, C1-20 fluorinated alkyl, acyl, acyl having fluorinated alkyl moiety; R1,2 = H, F; R3 = acid labile group, adhesive group, alkyl, C1-20 fluorinated alkyl) which has high transmittance to VUV radiation. The invention provides a resist composition using the acrylic resin as a base polymer which has high transparency, substrate adhesion, alkali develop-ability and acid-elimination capability and is suited for lithog. microprocessing.
- IC ICM G03F007-004  
ICS G03F007-26; C08J003-28
- NCL 430270100
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38
- ST photoresist **patterning** photolithog resin
- IT Photolithography  
(UV; polymers for photoresist compns. and **patterning** process)
- IT **Photoresists**  
(polymers for photoresist compns. and **patterning** process)
- IT 109-92-2DP, Ethyl **vinyl ether**, reaction product with hydroxyl group containing polymer **415683-21-5P 415683-23-7P 415683-25-9P 415683-26-0P 415683-27-1P 415683-30-6P 415683-32-8DP**, reaction product with Et **vinyl ether 415683-33-9P 415683-34-0P**  
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(polymers for **photoresist** compns. and **patterning** process)
- IT **415683-21-5P 415683-23-7P 415683-25-9P 415683-26-0P 415683-27-1P 415683-30-6P 415683-32-8DP**, reaction product with Et **vinyl ether 415683-33-9P 415683-34-0P**  
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
(polymers for **photoresist** compns. and **patterning** process)
- RN 415683-21-5 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 1-ethylcyclopentyl ester, polymer with tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 415683-20-4

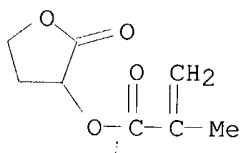
CMF C13 H16 F6 O3



CM 2

CRN 195000-66-9

CMF C8 H10 O4



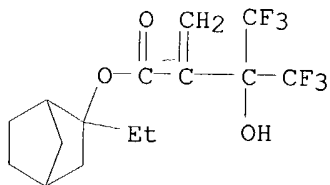
RN 415683-23-7 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 415683-22-6

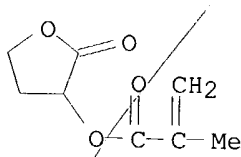
CMF C15 H18 F6 O3



CM 2

CRN 195000-66-9

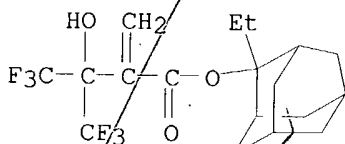
CMF C8 H10 O4



RN 415683-25-9 HCAPLUS  
 CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

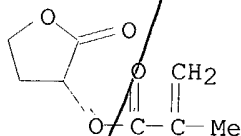
CM 1

CRN 415683-24-8  
 CMF C18 H22 F6 O3



CM 2

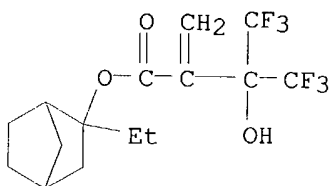
CRN 195000-66-9  
 CMF C8 H10 O4



RN 415683-26-0 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2-ethylbicyclo[2.2.1]hept-2-yl 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)butanoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

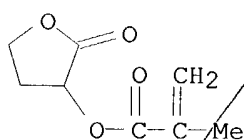
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 CMF C15 H18 F6 O3



CM 2

CRN 195000-66-9

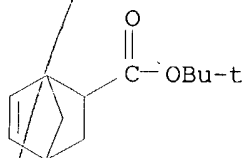
CMF C8 H10 O4



CM 3

CRN 154970-45-3

CMF C12 H18 O2



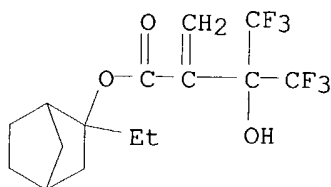
RN 415683-27-1 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2-ethylbicyclo[2.2.1]hept-2-yl 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)butanoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 415683-22-6

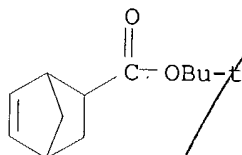
CMF C15 H18 F6 O3



CM 2

CRN 154970-45-3

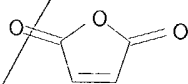
CMF C12 H18 O2



CM 3

CRN 108-31-6

CMF C4 H2 O3



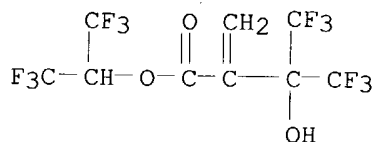
RN 415683-30-6 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with tetrahydro-2-oxo-3-furanyl 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)butanoate and 2,2,2-trifluoro-1-(trifluoromethyl)ethyl 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)butanoate (9CI) (CA INDEX NAME)

CM 1

CRN 415683-29-3

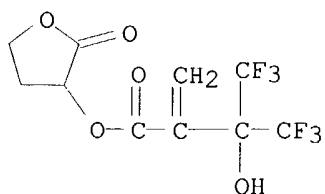
CMF C9 H4 F12 O3



CM 2

CRN 415683-28-2

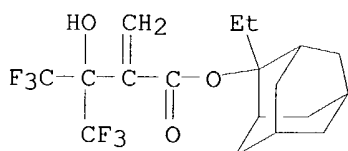
CMF C10 H8 F6 O5



CM 3

CRN 415683-24-8

CMF C18 H22 F6 O3



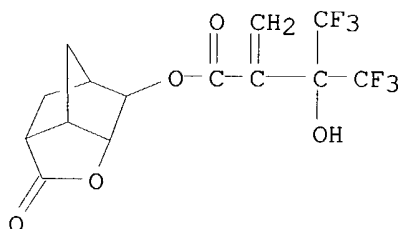
RN 415683-32-8 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, hexahydro-2-oxo-3,5-methano-2H-cyclopenta[b]furan-6-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 415683-31-7

CMF C14 H12 F6 O5



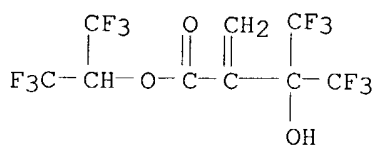
RN 415683-33-9 HCAPLUS

CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

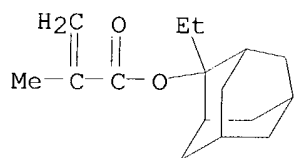
CRN 415683-29-3

CMF C9 H4 F12 O3



CM 2

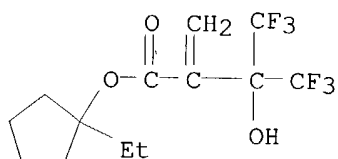
CRN 209982-56-9  
CMF C16 H24 O2



RN 415683-34-0 HCAPLUS  
CN Butanoic acid, 4,4,4-trifluoro-3-hydroxy-2-methylene-3-(trifluoromethyl)-, 1-ethylcyclopentyl ester, polymer with tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate and 2,2,2-trifluoro-1-(trifluoromethyl)ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

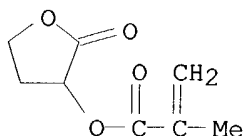
CM 1

CRN 415683-20-4  
CMF C13 H16 F6 O3



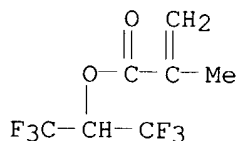
CM 2

CRN 195000-66-9  
CMF C8 H10 O4



CM 3

CRN 3063-94-3  
CMF C7 H6 F6 O2



L106 ANSWER 25 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:253088 HCAPLUS

DN 136:286596

TI Radiation sensitive resin composition

IN Miyaji, Masaaki; Nagai, Tomoki; Yada, Yuji; Numata, Jun; Nishimura, Yukio; Yamamoto, Masafumi; Ishii, Hiroyuki; Kajita, Toru; Shimokawa, Tsutomu

PA JSR Corporation, Japan

SO Eur. Pat. Appl., 71 pp.

CODEN: EPXXDW

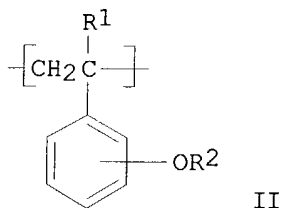
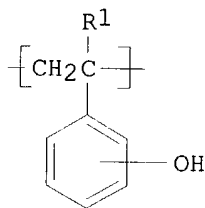
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1193558	A2	20020403	EP 2001-122213	20010917
	EP 1193558	A3	20020814		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002202604	A2	20020719	JP 2000-401302	20001228
	JP 2002162746	A2	20020607	JP 2001-280035	20010914
	US 2002058201	A1	20020516	US 2001-953941	20010918
PRAI	JP 2000-282689	A	20000918		
	JP 2000-401302	A	20001228		

GI



AB A chemical amplified radiation sensitive resin composition comprises a specific copolymer and a photoacid generator, wherein the copolymer contains the recurring unit I and/or II and  $\text{CH}_2\text{CR}^1(\text{C}=\text{O})\text{NR}^3\text{R}^4$  ( $\text{R}^1 = \text{H}, \text{Me}$ ;  $\text{R}^2 = \text{C}_4\text{-10}$  tertiary alkyl;  $\text{R}^3, 4 = \text{H}, \text{C}_1\text{-12 alkyl}, \text{C}_6\text{-15 aromatic}, \text{C}_1\text{-12 alkoxy}$ , or  $\text{R}^3$  and  $\text{R}^4$  may form, in combination and together with the nitrogen atom with which the  $\text{R}^3$  and  $\text{R}^4$  groups bond, a  $\text{C}_3\text{-14}$  cyclic structure, provided that  $\text{R}^3$  and  $\text{R}^4$  are not a hydrogen atom at the same time). The composition effectively responds to various radiations, exhibits excellent resolution and **pattern** configuration and minimal iso-dense bias, and can form



fine **patterns** at a high precision and in a stable manner.

IC ICM G03F007-038  
ICS G03F007-039; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38

IT **Photoresists**  
(chemical amplified; radiation sensitive resin composition for)

IT 66003-78-9, Triphenylsulfoniumtrifluoromethanesulfonate 84563-54-2,  
Bis(4-tert-butylphenyl)iodonium trifluoromethanesulfonate 133710-62-0  
138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 185195-30-6D,  
Bis(4-tert-butylphenyl)iodonium 10-camphorsulfonate, reaction product with  
Et **vinyl ether** 194999-85-4 205514-94-9,  
N-(10-Camphorsulfonyloxy)succinimide 406198-76-3 406198-77-4  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acid generator; radiation sensitive resin composition for photoresist containing)

IT 109-92-2DP, Ethyl **vinyl ether**, reaction product with  
poly(hydroxystyrene) 928-55-2DP, Ethyl-1-propenyl **ether**,  
reaction product with poly(hydroxystyrene) 2182-55-0DP, Cyclohexyl  
**vinyl ether**, reaction product with poly(hydroxystyrene)  
24979-70-2DP, Poly(p-hydroxystyrene), reaction product with Et  
**vinyl ether** and Et propenyl **ether**  
24979-70-2DP, Poly(p-hydroxystyrene), reaction product with di-Bu  
carbonate 34619-03-9DP, Di-tert-butyl carbonate, reaction product with  
poly(hydroxystyrene) 95418-60-3DP, Poly (p-tert-Butoxystyrene),  
hydrolyzed, and/or reaction product with cyclohexyl **vinyl**  
**ether** 123589-22-0DP, p-tert-Butoxystyrene-p-hydroxystyrene  
copolymer, reaction product with Et **vinyl ether**  
221524-18-1DP, reaction product with Et **vinyl ether**  
221549-67-3DP, hydrolyzed 340964-44-5P 357167-14-7P 406198-55-8DP,  
hydrolyzed 406198-56-9DP, hydrolyzed 406198-57-0DP, hydrolyzed  
406198-58-1DP, hydrolyzed 406198-60-5DP, hydrolyzed 406198-61-6DP,  
hydrolyzed 406198-62-7DP, hydrolyzed 406198-63-8DP, hydrolyzed  
406198-64-9DP, hydrolyzed **406198-68-3P 406198-69-4P**  
**406198-70-7P 406198-71-8P** 406198-72-9P 406198-73-0P  
**406198-74-1P 406198-75-2P**  
RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(resin; radiation sensitive resin composition for **photoresist** containing)

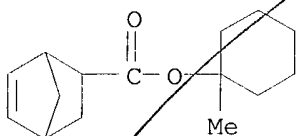
IT **406198-68-3P 406198-69-4P 406198-70-7P**  
**406198-71-8P 406198-74-1P 406198-75-2P**  
RL: PRP (Properties); SPN (Synthetic preparation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(resin; radiation sensitive resin composition for **photoresist** containing)

RN 406198-68-3 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
polymer with N,N-dimethylbicyclo[2.2.1]hept-5-ene-2-carboxamide,  
2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate  
(9CI) (CA INDEX NAME)

CM 1

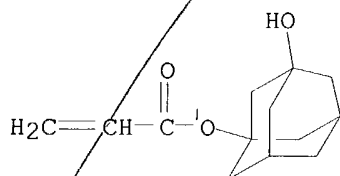
CRN 279243-78-6  
CMF C15 H22 O2



CM 2

CRN 216581-76-9

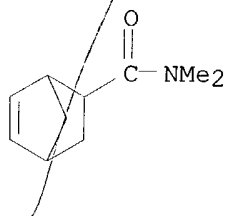
CMF C13 H18 O3



CM 3

CRN 25171-46-4

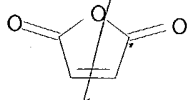
CMF C10 H15 N O



CM 4

CRN 108-31-6

CMF C4 H2 O3

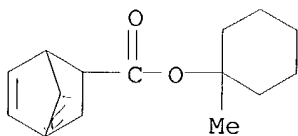


RN 406198-69-4 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester,  
polymer with N,N-dimethyl-2-propenamide, 2,5-furandione and  
3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

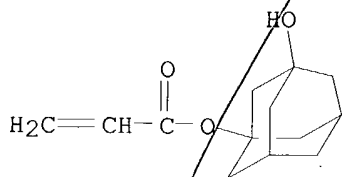
CM 1

CRN 279243-78-6  
CMF C15 H22 O2



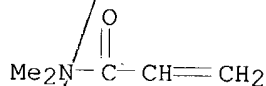
CM 2

CRN 216581-76-9  
CMF C13 H18 O3



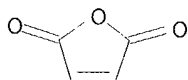
CM 3

CRN 2680-03-7  
CMF C5 H9 N O



CM 4

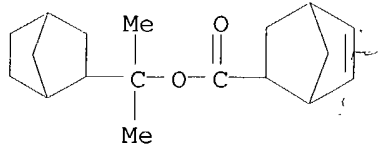
CRN 108-31-6  
CMF C4 H2 O3



RN 406198-70-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-bicyclo[2.2.1]hept-2-yl-1-methylethyl ester, polymer with N,N-dimethylbicyclo[2.2.1]hept-5-ene-2-carboxamide, 2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

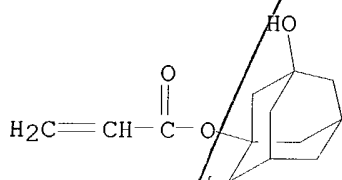
CM 1

CRN 380886-61-3  
CMF C18 H26 O2



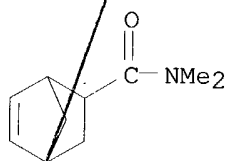
CM 2

CRN 216581-76-9  
CMF C13 H18 O3



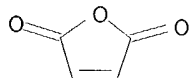
CM 3

CRN 25171-46-4  
CMF C10 H15 N O



CM 4

CRN 108-31-6  
CMF C4 H2 O3



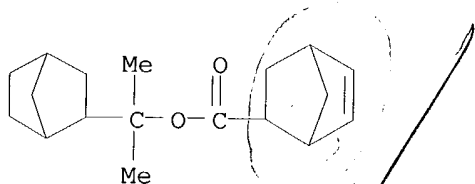
RN 406198-71-8 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-bicyclo[2.2.1]hept-2-yl-1-methylethyl ester, polymer with N,N-dimethyl-2-propenamide, 2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX

NAME)

CM 1

CRN 380886-61-3

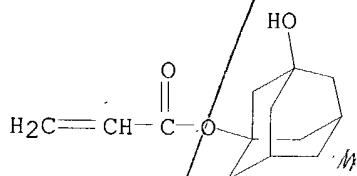
CMF C18 H26 O2



CM 2

CRN 216581-76-9

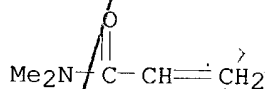
CMF C13 H18 O3



CM 3

CRN 2680-03-7

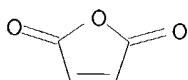
CMF C5 H9 N O



CM 4

CRN 108-31-6

CMF C4 H2 O3



RN 406198-74-1 HCAPLUS

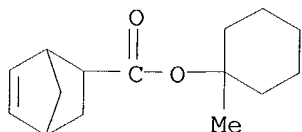
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-methylcyclohexyl ester, polymer with 2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl

2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 279243-78-6

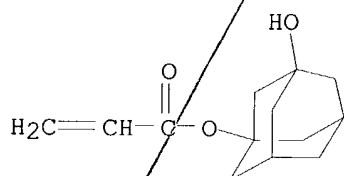
CMF C15 H22 O2



CM 2

CRN 216581-76-9

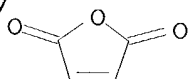
CMF C13 H18 O3



CM 3

CRN 108-31-6

CMF C4 H2 O3



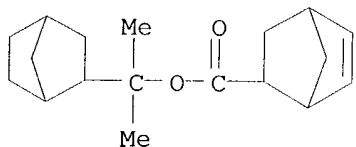
RN 406198-75-2 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-bicyclo[2.2.1]hept-2-yl-1-methylethyl ester, polymer with 2,5-furandione and 3-hydroxytricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

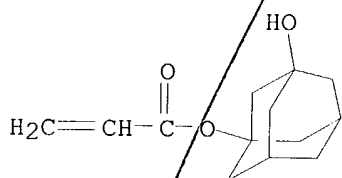
CRN 380886-61-3

CMF C18 H26 O2



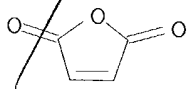
CM 2

CRN 216581-76-9  
CMF C13 H18 O3



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 26 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:119603 HCAPLUS

DN 136:191685

TI Positively working photoresist composition for far-ultraviolet exposure

IN Nakao, Hajime; Sato, Kenichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 55 pp.

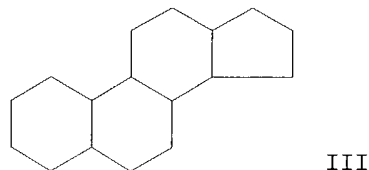
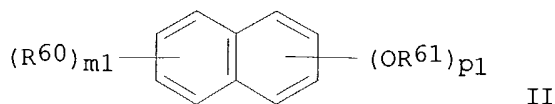
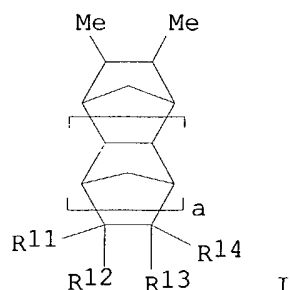
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002049154	A2	20020215	JP 2000-233146	20000801
PRAI	JP 2000-233146		20000801		
OS	MARPAT 136:191685				
GI					



- AB The composition, useful for ultramicroolithog. process in fabrication of ultra-large-scale integrated circuits (ULSI), contains (A) polymers having alicyclic repeating unit I [R11-R14 = H, (substituted) alkyl; a = 0, 1] and [CH<sub>2</sub>CR(ACO<sub>2</sub>W)] unit [R1 = H, Me; A = none, alkylene, cycloalkylene, O, S, CO, and/or ester; W = CRaRbRc, CHRdORe; Ra-Rc, Re = (halo-, alkoxy-, alkoxy-carbonyl, acyl-, or acyloxy-substituted) C1-20 linear or branched alkyl, C3-20 cycloalkyl; Ra and Rb may form an alicyclic ring; Rd = H, alkyl] to increase alkali developability by acids, (B) photoacid generators, and (C) R[X(CR51R52)qCO<sub>2</sub>R']<sub>n</sub> (II; X = O, S, NR53, none; R51-R53 = H, alkyl; R' = acid-degradable group as CO<sub>2</sub>R'; R = bridged hydrocarbon, saturated alicyclic compound, naphthalene-containing n-valent residue; n = 1-4; q = 0-10), naphthalene derivs. III (R60 = alkyl, halo; R61 = acid-degradable group as OR61; m = 0-4; p = 1-4), or a cholic acid derivative having structure IV substituted with ≥2 groups having ≥1 substituent containing carboxyl group protected with acid-unstable group. The compds. II-IV work as dissoln. inhibitors and the composition gives high-resolution contact hole and trench **patterns** in fabrication of semiconductor devices.
- IC ICM G03F007-039  
ICS C08F232-00; C08K005-00; C08K005-10; C08K005-17; C08K005-372; C08K005-541; C08L045-00; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST pos photoresist far UV dissoln inhibitor; contact hole trench **pattern** photoresist pos
- IT Positive **photoresists**  
(UV; pos.-working photoresist composition for far-UV exposure)
- IT 260448-02-0P, tert-Butyl acrylate-maleic anhydride-norbornene copolymer  
**369371-67-5P** 383196-78-9P 383196-80-3P 383196-82-5P  
383196-83-6P 383196-85-8P 383196-87-0P **383196-88-1P**  
**383196-89-2P** 383196-91-6P **383196-93-8P**  
**383196-95-0P** 391232-36-3P 391232-38-5P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(pos.-working **photoresist** composition for far-UV exposure)
- IT 9016-45-9, Polyoxyethylene nonylphenyl **ether** 137462-24-9,  
Megafac F 176 216679-67-3, Megafac R 08  
RL: TEM (Technical or engineered material use); USES (Uses)  
(surfactant; pos.-working photoresist composition for far-UV exposure)



IT 369371-67-5P 383196-88-1P 383196-89-2P  
383196-93-8P 383196-95-0P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(pos.-working **photoresist** composition for far-UV exposure)

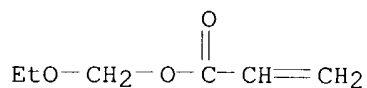
RN 369371-67-5 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

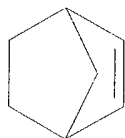
CMF C6 H10 O3



CM 2

CRN 498-66-8

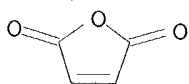
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



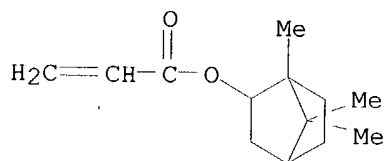
RN 383196-88-1 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 128946-20-3

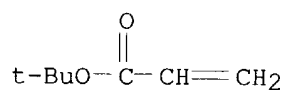
CMF C13 H20 O2



CM 2

CRN 1663-39-4

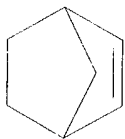
CMF C7 H12 O2



CM 3

CRN 498-66-8

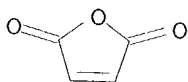
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



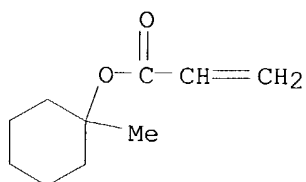
RN 383196-89-2 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1-methylcyclohexyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 178889-47-9

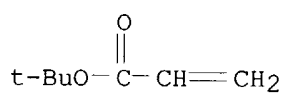
CMF C10 H16 O2



CM 2

CRN 1663-39-4

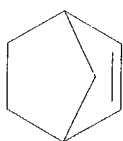
CMF C7 H12 O2



CM 3

CRN 498-66-8

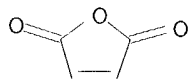
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



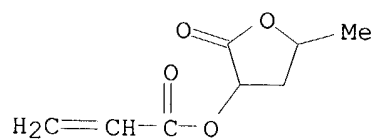
RN 383196-93-8 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-5-methyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 383196-92-7

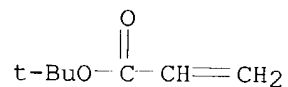
CMF C8 H10 O4



CM 2

CRN 1663-39-4

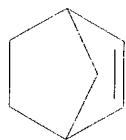
CMF C7 H12 O2



CM 3

CRN 498-66-8

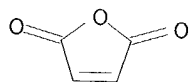
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



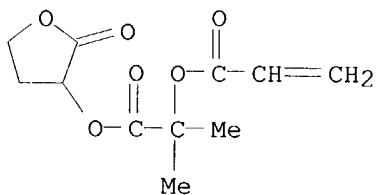
RN 383196-95-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 383196-94-9

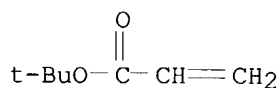
CMF C11 H14 O6



CM 2

CRN 1663-39-4

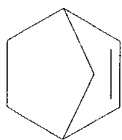
CMF C7 H12 O2



CM 3

CRN 498-66-8

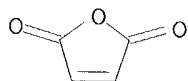
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 27 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:84088 HCAPLUS

DN 136:119239

TI New copolymers for deep UV workable photoresists with good light transmittance and high sensitivity and resolution and method for forming resist **patterns** with high aspect ratio using the copolymers

IN Nakamura, Takeshi; Ikegawa, Taeko; Sawano, Atsushi; Doi, Kosuke; Ohara, Hidekatsu

PA Tokyo Ohka Kogyo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002030116	A2	20020131	JP 2000-214450	20000714
	US 2002031719	A1	20020314	US 2001-901646	20010711
	US 6517993	B2	20030211		
	DE 10134162	A1	20020425	DE 2001-10134162	20010713
PRAI	JP 2000-214450	A	20000714		

AB The copolymers bear units derived from (meth)acrylic acid 1-(C1-4 alkyl)cyclohexyl esters, unsatd. acid anhydrides, and optionally **allyltrimethylsilane** or/and 2-(C1-4 alkyl)-2-adamantyl (meth)acrylate, and are used in a photoresist composition containing photochem. acid formers and organic solvents. Thus, mixing 1-ethyl-1-cyclohexyl methacrylate 7.4 with 2-methyl-2-adamantyl methacrylate 5.3, maleic anhydride 0.9, **allyltrimethylsilane** 7.3 and AIBN 0.6 in EtOAc 69.4 parts at room temperature for 60 min, heating at 70° for 22 h and working up gave a copolymer with Mw 18,400 and polydispersity 1.54, which was dissolved in propylene glycol monomethyl **ether** acetate to 7% concentration, mixed at 30 g with 4-(MeO)C6H4(Ph)2S+C4F9SO3- 0.258 g, and filtered to give a photoresist with photo-sensitivity 60 J/cm2, resolution 0.17  $\mu$ m and focusing deep width 0.5  $\mu$ m.

IC ICM C08F220-18  
ICS C08F222-04; C08F222-06; C08F230-08; C08G081-02; C08K005-00; C08K005-103; C08K005-41; C08L033-06; G03F007-039; G03F007-075; G03F007-40; H01L021-027

CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 74, 76

ST photoresist acrylic adamantyl **allyltrimethylsilane** ester copolymer sulfonium curing catalyst; resist **pattern** resolu photoresist **allyltrimethylsilane** maleate cyclohexyl methacrylate copolymer

IT **Photoresists**  
(new copolymers for deep UV workable **photoresists** with good light transmittance and high sensitivity and resolution and method for forming resist **patterns** with high aspect ratio using copolymers)

IT 116808-67-4, Diphenyl(p-methoxyphenyl)sulfonium triflate  
RL: CAT (Catalyst use); USES (Uses)  
(curing catalyst; new copolymers for deep UV workable **photoresists** with good light transmittance and high sensitivity and resolution and method for forming resist **patterns** with high aspect ratio using copolymers)

IT **391208-99-4P, Allyltrimethylsilane**; 1-ethyl-1-cyclohexyl methacrylate; maleic anhydride; 2-methyl-2-adamantyl methacrylate copolymer **391209-01-1P**, 1-Ethyl-1-cyclohexyl methacrylate; maleic anhydride copolymer **391209-02-2P, Allyltrimethylsilane**; 1-ethyl-1-cyclohexyl methacrylate; maleic anhydride copolymer  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(new copolymers for deep UV workable **photoresists** with good light transmittance and high sensitivity and resolution and method for forming **resist patterns** with high aspect ratio using copolymers)

IT 97917-34-5, X 22-161AS  
RL: TEM (Technical or engineered material use); USES (Uses)

(silylating agent; new copolymers for deep UV workable **photoresists** with good light transmittance and high sensitivity and resolution and method for forming resist **patterns** with high aspect ratio using copolymers)

IT **391208-99-4P, Allyltrimethylsilane**; 1-ethyl-1-cyclohexyl methacrylate; maleic anhydride; 2-methyl-2-adamantyl methacrylate copolymer **391209-01-1P**, 1-Ethyl-1-cyclohexyl methacrylate; maleic anhydride copolymer **391209-02-2P, Allyltrimethylsilane**; 1-ethyl-1-cyclohexyl methacrylate; maleic anhydride copolymer  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(new copolymers for deep UV workable **photoresists** with good light transmittance and high sensitivity and resolution and method for forming **resist patterns** with high aspect ratio using copolymers)

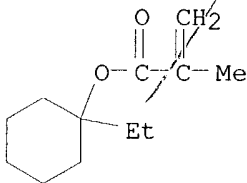
RN 391208-99-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 1-ethylcyclohexyl 2-methyl-2-propenoate, 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 274248-09-8

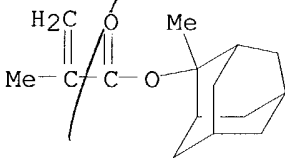
CMF C12 H20 O2



CM 2

CRN 177080-67-0

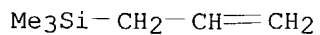
CMF C15 H22 O2



CM 3

CRN 762-72-1

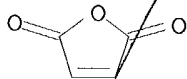
CMF C6 H14 Si



CM 4

CRN 108-31-6

CMF C4 H2 O3



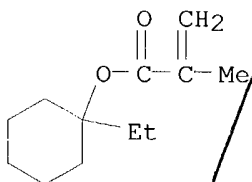
RN 391209-01-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclohexyl ester, polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 274248-09-8

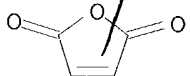
CMF C12 H20 O2



CM 2

CRN 108-31-6

CMF C4 H2 O3



RN 391209-02-2 HCAPLUS

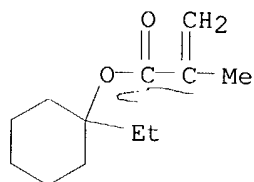
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclohexyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 274248-09-8

CMF C12 H20 O2

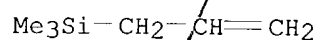




CM 2

CRN 762-72-1

CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 28 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:65853 HCAPLUS

DN 136:126558

TI Positive-working photoresist composition containing specific resin and photoacid generator

IN Nakao, Hajime; Sato, Kenichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 52 pp.

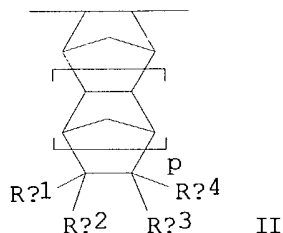
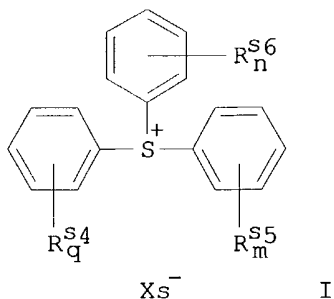
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002023376	A2	20020123	JP 2000-208514	20000710
PRAI	JP 2000-208514		20000710		
OS	MARPAT 136:126558				
GI					



AB The title composition contains a resin becoming soluble in an alkali developer by

an acid and a photoacid generator, wherein the resin has re repeating unit I (  $R_{n1-n4} = H, \text{ alkyl}; p = 0,1$ ) and  $[-CH_2-C(R_{n5})(-A-COOW)]$  (  $R_{n5} = H, \text{ methyl}; A = \text{single bond, alkylene, ether, etc.}; W = \text{alkyl group substituted with halo or group containing carbonyl}$ ) and wherein the photoacid generator has structure II (  $R_{s4-s6} = \text{alkyl, alkoxy, alkoxy carbonyl, etc.}; q = 0-5; n,m = 0-5, q+m+n=1; Xs^- = R-SO_3^-; R = \text{aliphatic hydrocarbon, aromatic hydrocarbon}$ ). The composition, which contains the aforementioned resin and photoacid generator, shows the good storageability and provides the wide margin of the exposure, the improved **pattern** edge roughness and the high resolution

IC ICM G03F007-039

ICS C08F220-10; C08F222-00; C08F232-00; C08K005-00; C08L033-04; C08L035-00; C08L045-00; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

IT Positive **photoresists**

(pos. working photoresist composition containing specific resin and photoacid generator)

IT 260448-02-0P, Norbornene-tert-butyl acrylate-maleic anhydride copolymer

**369371-67-5P** 383196-78-9P 383196-80-3P 383196-82-5P

383196-83-6P 383196-85-8P 383196-87-0P **383196-88-1P**

**383196-89-2P** 383196-91-6P **383196-93-8P**

**383196-95-0P** 391232-36-3P 391232-38-5P

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(resin in pos. working **photoresist** composition)

IT **369371-67-5P 383196-88-1P 383196-89-2P**

**383196-93-8P 383196-95-0P**

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered

material use); **PREP (Preparation)**; USES (Uses)  
(resin in pos. working **photoresist** composition)

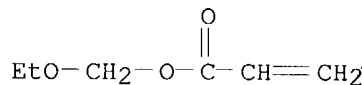
RN 369371-67-5 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

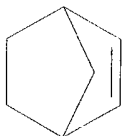
CMF C6 H10 O3



CM 2

CRN 498-66-8

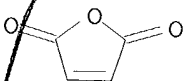
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



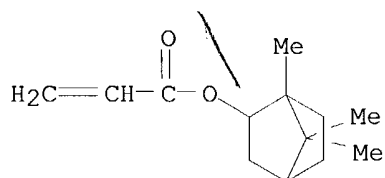
RN 383196-88-1 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

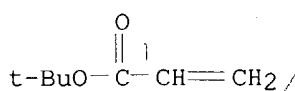
CRN 128946-20-3

CMF C13 H20 O2



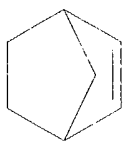
CM 2

CRN 1663-39-4  
CMF C7 H12 O2



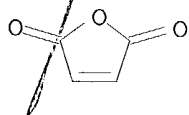
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

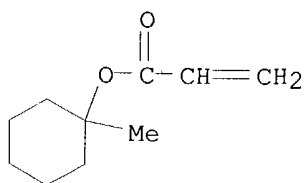
CRN 108-31-6  
CMF C4 H2 O3



RN 383196-89-2 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1-methylcyclohexyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

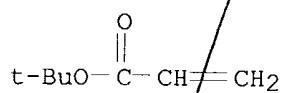
CRN 178889-47-9  
CMF C10 H16 O2



CM 2

CRN 1663-39-4

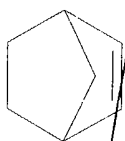
CMF C7 H12 O2



CM 3

CRN 498-66-8

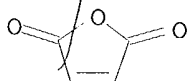
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



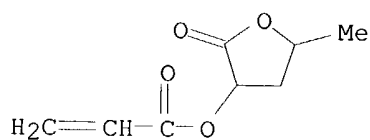
RN 383196-93-8 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-5-methyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 383196-92-7

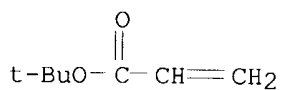
CMF C8 H10 O4



CM 2

CRN 1663-39-4

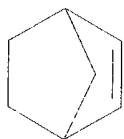
CMF C7 H12 O2



CM 3

CRN 498-66-8

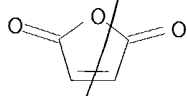
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



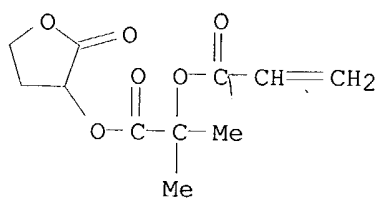
RN 383196-95-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-furanyl)oxy]ethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 383196-94-9

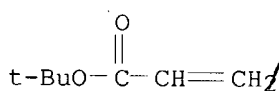
CMF C11 H14 O6



CM 2

CRN 1663-39-4

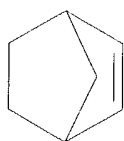
CMF C7 H12 O2



CM 3

CRN 498-66-8

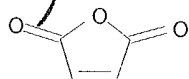
CMF C7 H10



CM 4

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 29 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:26270 HCAPLUS  
 DN 136:110118  
 TI Radiation-sensitive photoresist composition for microlithography  
 IN Takahashi, Omote; Yasunami, Shoichiro  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 28 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese

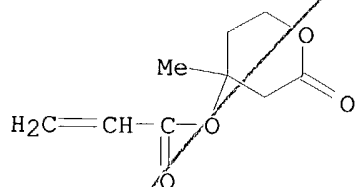
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002006496	A2	20020109	JP 2000-191529	20000626
PRAI	JP 2000-191529		20000626		
AB	The title composition contains a resin, which increases the solubility rate in an alkali solution by reacting with an acid, a photoacid generator, a solvent, and an organic basic compound such as amine, wherein the resin contains Si and wherein the basic compound contains basic repeating units. The composition, which contains the resin having Si and the basic compound, provides the good <b>pattern</b> profile and the high resolution <b>pattern</b> .				
IC	ICM G03F007-039				
	ICS G03F007-004; G03F007-075; H01L021-027				
CC	74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
IT	Light-sensitive materials Lithography <b>Photoresists</b> (radiation-sensitive photoresist composition for microlithog.)				
IT	314295-77-7P, Maleic anhydride- <b>Allyltrimethylsilane</b> -tert-Butyl acrylate-Methyl acrylate copolymer 381691-11-8P <b>388088-22-0P</b> 388088-23-1P 388088-24-2P 388088-26-4P 388088-27-5P 388088-28-6P 388088-30-0P RL: <b>SPN (Synthetic preparation)</b> ; TEM (Technical or engineered material use); <b>PREP (Preparation)</b> ; USES (Uses) (resin in radiation-sensitive <b>photoresist</b> composition for microlithog.)				
IT	<b>388088-22-0P</b> RL: <b>SPN (Synthetic preparation)</b> ; TEM (Technical or engineered material use); <b>PREP (Preparation)</b> ; USES (Uses) (resin in radiation-sensitive <b>photoresist</b> composition for microlithog.)				
RN	388088-22-0 HCAPLUS				
CN	2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, tetrahydro-4-methyl-2-oxo-2H-pyran-4-yl 2-propenoate and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)				

CM 1

CRN 189620-78-8

CMF C9 H12 O4

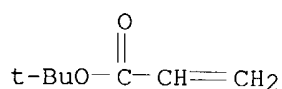


CM 2

CRN 1663-39-4

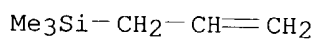
CMF C7 H12 O2





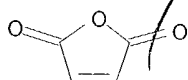
CM 3

CRN 762-72-1  
CMF C6 H14 Si



CM 4

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 30 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:933853 HCAPLUS

DN 136:77250

TI Positive-working photoresist composition containing specific acid-sensitive compound and specific solvents

IN Nakao, Hajime; Sato, Kenichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 34 pp.

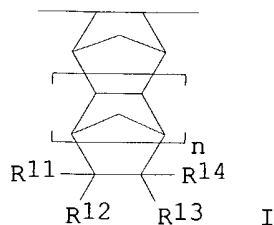
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001356478	A2	20011226	JP 2000-175519	20000612
PRAI	JP 2000-175519		20000612		
GI					



AB The title composition contains a resin increasing the solubility rate in an alkali

developer by reacting with an acid; an acid generator generating an acid by reacting with an actinic ray or radiation, and a mixed solvent, wherein the resin has repeating unit I ( R11-14 = H, alkyl; n = 0, 1) and [-CH<sub>2</sub>-C(R1)(A-COO-W)-] ( R1 = H, methyl; A = single bond connecting group, alkylene, cycloalkylene, etc.; W = alkyl) and wherein the mixed solvent consists of a solvent from A group and a solvent from B group or C group; group A: propylene glycol monoalkyl **ether** carboxylate; group B: propylene glycol monoalkyl **ether**, alkyl lactate, an acetate, ketone, and alkoxyalkyl propionate; group C:  $\gamma$ -butyrolactone, ethylene carbonate, propylene carbonate. The composition, which contains the acid-sensitive resin and the solvents, generates little fault **pattern** nor dust particles during the development and shows the good storageability.

IC ICM G03F007-039

ICS C08F220-10; C08F222-00; C08F232-00; C08K005-00; C08K005-16;  
C08L033-04; C08L035-00; C08L045-00; C08L083-04; G03F007-004;  
H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Light-sensitive materials

#### Photoresists

(pos.-working photoresist composition)

IT **369371-67-5P** 383196-78-9P 383196-80-3P 383196-81-4P  
383196-82-5P 383196-83-6P 383196-85-8P 383196-87-0P  
**383196-88-1P** **383196-89-2P** 383196-90-5P 383196-91-6P  
**383196-93-8P** **383196-95-0P**

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(resin in pos.-working **photoresist** composition)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 97-64-3,  
Ethyl lactate 108-32-7, Propylene carbonate 1320-67-8, Propylene  
glycol monomethyl **ether** 14272-48-1, 2-Ethoxyethyl propionate  
84540-57-8, Propylene glycol monomethyl **ether** acetate  
98516-33-7, Propylene glycol monomethyl **ether** propionate  
RL: MSC (Miscellaneous)

(solvent in pos.-working photoresist composition)

IT **369371-67-5P** **383196-88-1P** **383196-89-2P**  
**383196-93-8P** **383196-95-0P**

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(resin in pos.-working **photoresist** composition)

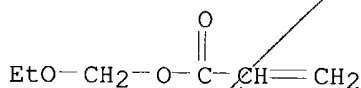
RN 369371-67-5 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

CMF C6 H10 O3

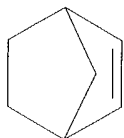


KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

CM 2

CRN 498-66-8

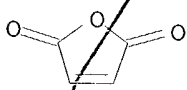
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



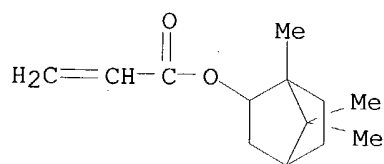
RN 383196-88-1 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 128946-20-3

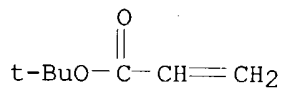
CMF C13 H20 O2



CM 2

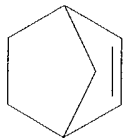
CRN 1663-39-4

CMF C7 H12 O2



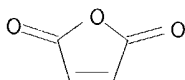
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

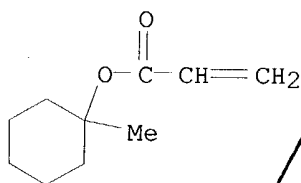
CRN 108-31-6  
CMF C4 H2 O3



RN 383196-89-2 HCAPIUS  
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with  
bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1-methylcyclohexyl  
2-propenoate (9CI) (CA INDEX NAME)

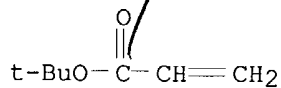
CM 1

CRN 178889-47-9  
CMF C10 H16 O2



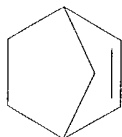
CM 2

CRN 1663-39-4  
CMF C7 H12 O2



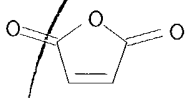
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

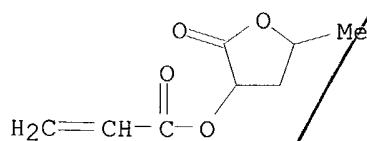
CRN 108-31-6  
CMF C4 H2 O3



RN 383196-93-8 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and tetrahydro-5-methyl-2-oxo-3-furanyl 2-propenoate (9CI) (CA INDEX NAME)

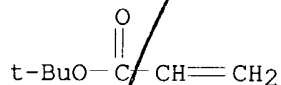
CM 1

CRN 383196-92-7  
CMF C8 H10 O4



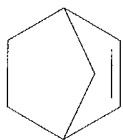
CM 2

CRN 1663-39-4  
CMF C7 H12 O2



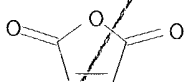
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

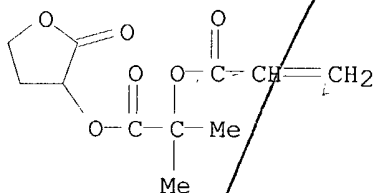
CRN 108-31-6  
CMF C4 H2 O3



RN 383196-95-0 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with  
bicyclo[2.2.1]hept-2-ene, 1,1-dimethyl-2-oxo-2-[(tetrahydro-2-oxo-3-  
furanyl)oxy]ethyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

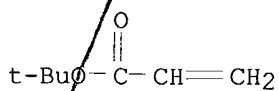
CM 1

CRN 383196-94-9  
CMF C11 H14 O6



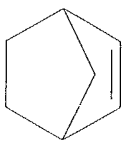
CM 2

CRN 1663-39-4  
CMF C7 H12 O2



CM 3

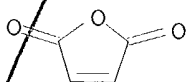
CRN 498-66-8  
CMF C7 H10



CM 4

QRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 31 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:900258 HCAPLUS

DN 136:29177

TI Radiation-sensitive resin composition for chemical amplified pos. tone resist.

IN Nishimura, Yukio; Douki, Katsuji; Kajita, Toru; Shimokawa, Tsutomu

PA JSR Corporation, Japan

SO Eur. Pat. Appl., 54 pp.

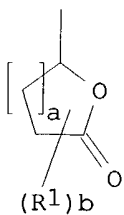
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1162506	A1	20011212	EP 2001-113944	20010607
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002062657	A2	20020228	JP 2001-95877	20010329
	US 2002009667	A1	20020124	US 2001-874977	20010607
	US 6753124	B2	20040622		
PRAI	JP 2000-173708	A	20000609		
	JP 2001-95877	A	20010329		
GI					



I

AB A radiation-sensitive resin composition used as a chemical amplified pos. tone resist responsive to short wavelength active radiation such as KrF excimer

laser and ArF excimer laser is disclosed. The resin composition comprises: (A) an acid-dissociable group-containing resin which is insol. or scarcely soluble in

alkali and becomes alkali soluble when the acid-dissociable group dissocs., the resin comprising a lactone cyclic structure I (a = 1-3; b = 0-9; R1 = monovalent organic group); and (B) a photoacid generator. The composition has high transmittance of radiation, exhibits high sensitivity, resolution, and **pattern** shape, and can produce semiconductors at a high yield without producing resolution defects during microfabrication.

ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

IT Positive **photoresists**

(radiation-sensitive resin composition for)

IT 1116-76-3, Tri-n-octylamine 3033-62-3, Bis(2-dimethylaminoethyl)

**ether** 193810-83-2, N-tert-Butoxycarbonyl-2-phenylbenzimidazole

330576-56-2, N-tert-Butoxycarbonyldicyclohexylamine

RL: TEM (Technical or engineered material use); USES (Uses)

(acid diffusion control agent; radiation-sensitive resin composition for chemical amplified pos. tone resist)

IT 379257-71-3P 379257-72-4P 379257-73-5P 379257-75-7P 379257-76-8P

**379257-77-9P** 379257-78-0P 379257-79-1P 379257-81-5P

379257-82-6P **379257-83-7P**

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(radiation-sensitive resin composition for chemical amplified pos. tone resist)

IT 96-48-0,  $\gamma$ -Butyrolactone 108-94-1, Cyclohexanone, uses 110-43-0,

2-Heptanone 84540-57-8, Propylene glycol monomethyl **ether** acetate

RL: TEM (Technical or engineered material use); USES (Uses)

(solvent; radiation-sensitive resin composition for chemical amplified pos. tone resist)

IT **379257-77-9P 379257-83-7P**

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(radiation-sensitive resin composition for chemical amplified pos. tone resist)

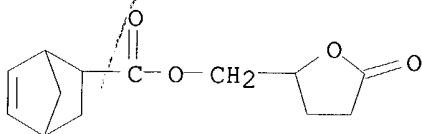
RN 379257-77-9 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, (tetrahydro-5-oxo-2-furanyl)methyl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 264193-11-5

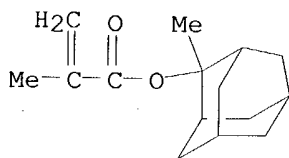
CMF C13 H16 O4





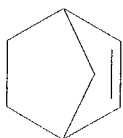
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



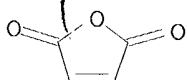
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

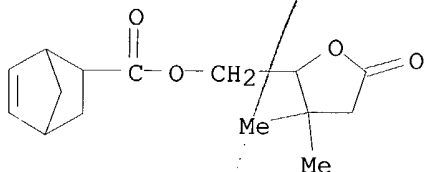
CRN 108-31-6  
CMF C4 H2 O3



RN 379257-83-7 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
polymer with 2,5-furandione, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
2-methyl-2-propenoate and (tetrahydro-3,3-dimethyl-5-oxo-2-furanyl)methyl  
bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

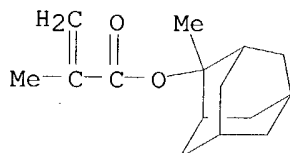
CM 1

CRN 379257-70-2  
CMF C15 H20 O4



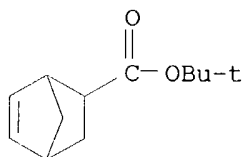
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



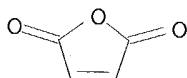
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L106 ANSWER 32 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:791924 HCAPLUS

DN 135:336912

TI Polymer having fluorinated maleic acid-type units, photoresist material,  
and **patterning** of the photoresist

IN Hatakeyama, Jun; Watanabe, Atsushi; Harada, Yuji

PA Shin-Etsu Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

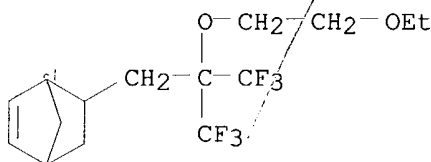
FAN.CNT 1

PATENT NO.

KIND DATE

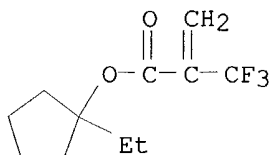
APPLICATION NO. DATE

PI JP 2001302735 A2 20011031 JP 2001-31743 20010208  
 US 2001038969 A1 20011108 US 2001-783446 20010215  
 US 6579658 B2 20030617  
 PRAI JP 2000-40190 A 20000217  
 JP 2000-40193 A 20000217  
 AB The polymer involves fluorinated maleic anhydride- or maleimide-derived repeating units. The photoresist material contains the polymer. A chemical amplified photoresist containing the polymer, an organic solvent, an acid-generating agent, and a basic compound is also claimed. The photoresist material is applied on a substrate, heated, exposed to high-energy beam or electron beam at  $\leq 300$  nm through a photomask, and developed optionally after heating. The photoresist material, showing high sensitivity F2 excimer laser, is suitable for fine processing in semiconductor device fabrication.  
 IC ICM C08F222-06  
 ICS C08F222-40; C08K005-00; C08L035-00; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76  
 IT **Photoresists**  
 (chemical amplified; photoresist containing polymer involving fluorinated maleic anhydride- or maleimide-derived repeating units)  
 IT 370565-98-3P, Difluoromaleic anhydride-1-ethylcyclopentyl norbornene-5-carboxylate copolymer 370565-99-4P, 1-Ethylcyclopentyl norbornene-5-carboxylate-monofluoromaleic anhydride copolymer  
 370566-00-0P 370566-02-2P **370566-03-3P** 370566-04-4P  
 370566-06-6P 370566-08-8P 370566-09-9P 370566-10-2P  
 RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (photoresist containing polymer involving fluorinated maleic anhydride- or maleimide-derived repeating units)  
 IT 84540-57-8, Propylene glycol monomethyl ether acetate  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; in photoresist containing polymer involving fluorinated maleic anhydride- or maleimide-derived repeating units)  
 IT **370566-03-3P**  
 RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (photoresist containing polymer involving fluorinated maleic anhydride- or maleimide-derived repeating units)  
 RN 370566-03-3 HCAPLUS  
 CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1-ethylcyclopentyl ester, polymer with 3,4-difluoro-2,5-furandione and 5-[2-(2-ethoxyethoxy)-3,3,3-trifluoro-2-(trifluoromethyl)propyl]bicyclo[2.2.1]hept-2-ene (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 370566-01-1  
 CMF C15 H20 F6 O2



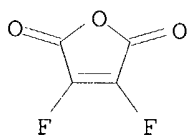
CM 2

CRN 357294-14-5  
CMF C11 H15 F3 O2



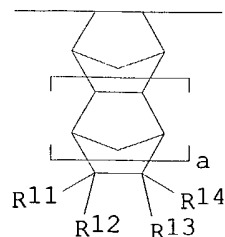
CM 3

CRN 669-78-3  
CMF C4 F2 O3

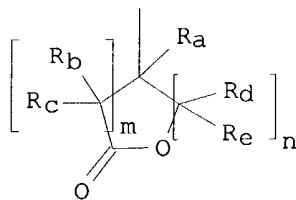


L106 ANSWER 33 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:778183 HCAPLUS  
DN 135:336902  
TI Positive-working photoresist composition for semiconductor device  
fabrication  
IN Sato, Kenichiro; Aogo, Toshiaki  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 28 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001296661	A2	20011026	JP 2000-115497	20000417
	US 2002009666	A1	20020124	US 2001-834639	20010416
PRAI	JP 2000-115497	A	20000417		
	JP 2000-215574	A	20000717		
	JP 2000-231670	A	20000731		
GI					



I



II

AB The title composition contains a resin increasing solubility rate by reacting with

an acid and an acid-generating compound, wherein the resin contains repeating unit I ( $R_{11-14} = H, \text{ alkyl}; a = 0, 1$ ) and  $[CH_2-C(R_1)(COOWLc)]$  ( $Lc = II; W = \text{connecting group, alkylene, ether, etc.}; Ra-e = H, Cl-4 \text{ alkyl}; m, n = 0-3 \text{ integer}, 2 \leq m+n \leq 6$ ). The photoresist composition, which contains the aforementioned acid-sensitive resin, provides the resist **pattern** of improved edge roughness.

IC ICM G03F007-039

ICS C08F220-28; C08F222-40; C08F232-04; C08F232-08; C08K005-00; C08K005-16; C08L033-14; C08L045-00; C08L101-12; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT Photolithography

#### Photoresists

Semiconductor device fabrication

(pos.-working photoresist composition for semiconductor device fabrication)

IT **369371-67-5P**, Norbornene-ethoxymethyl acrylate-maleic anhydride copolymer

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos.-working **photoresist** composition for semiconductor device fabrication)

IT **369371-67-5P**, Norbornene-ethoxymethyl acrylate-maleic anhydride copolymer

RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos.-working **photoresist** composition for semiconductor device fabrication)

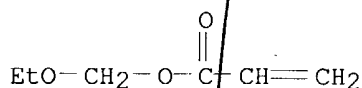
RN 369371-67-5 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with bicyclo[2.2.1]hept-2-ene and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

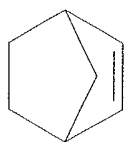
CMF C6 H10 O3



CM 2

CRN 498-66-8

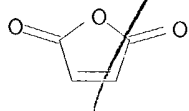
CMF C7 H10



CM 3

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 34 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:541847 HCAPLUS

DN 135:129575

TI Positive photoresist compositions containing norbornene polymers bearing silicon-containing branches

IN Mizutani, Kazuyoshi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 42 pp.

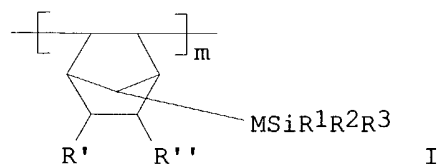
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001201860	A2	20010727	JP 2000-8042	20000117
PRAI	JP 2000-8042		20000117		
GI					



AB The pos. photoresist compns. contain polymers containing repeating units bearing groups forming acid groups by acidolysis and repeating units shown

as I (R1-3 = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy; M = single bond, divalent linkage; R', R'' = H, trialkylmethylsilyl, trialkylmethylsilylmethyl, Cl2Si, trialkoxysilyl, dialkoxymethylsilyl, COA; A = OH, OB, NHB; B = alkyl; R' and R'' may be linked together via alkylene, CO2CO, CONR'''CO and thereby form ring; R' and R'' may be united, form alkylene, CO2CO, CONR'''CO and thereby form ring; R''' = H, OH, alkyl, OSO2R''''; R'''' = alkyl, trihalomethyl). The acid group-forming repeating units may be CH2CY(LCO2Q) (Y = H, Me, CN, Cl; L = single bond, divalent linkage; Q = H, group forming CO2H by acidolysis) or CH[C(O)X2L2A2]CH[C(O)X1L1A1] (X1, X2 = O, S, NH, NHSO2; L1, L2 = single bond, divalent linkage; A1 = Q, CO2Q; when X1 = O and L1 = single bond, A1 = Q; A2 = H, CN, OH, CO2H, CO2R', COCNHR'', alkyl, cyclic hydrocarbyl, alkoxy, CO2Q; R', R'' = alkyl; Q = H, group forming CO2H by acidolysis). The polymers may contain repeating units derived from maleic anhydride or (N-substituted) maleimides. Preferably, the compns. comprise (A) the above-mentioned polymers, (B) actinic light- or radiation-sensitive acid generators, (C) organic solvents, and optionally (D) organic bases, and (E) surfactants. The compns. have high sensitivity yet high resolution, give rectangular **patterns** with reduced edge roughness of line **patterns**, and suppressed **pattern** shifts on **pattern** transfer to the lower resist layers in O plasma etching process and are suitable for upper layers for bilayered resists. Their **pattern** formation using ArF excimer laser was exemplified.

IC ICM G03F007-075

ICS C08F230-08; C08L043-04; G03F007-004; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Positive **photoresists**

(UV, deep UV, chemical amplified; pos. photoresist compns. containing norbornene polymers bearing silicon-containing branches)

IT Positive **photoresists**

(chemical amplified; pos. photoresist compns. containing norbornene polymers bearing silicon-containing branches)

IT 762-72-1, **Allyltrimethylsilane** 351186-90-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(monomer starting material; pos. photoresist compns. containing norbornene polymers bearing silicon-containing branches)

IT 351186-91-9P 351186-92-0P 351186-93-1P 351186-95-3P 351186-97-5P

351186-99-7P 351187-00-3P 351187-01-4P 351187-02-5P 351187-03-6P

**351187-04-7P** 351187-05-8P 351187-06-9P 351187-07-0P

351187-09-2P 351187-11-6P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos. **photoresist** compns. containing norbornene polymers bearing silicon-containing branches)

IT 9016-45-9, Polyoxyethylene nonylphenyl **ether** 137462-24-9,

Megafac F 176 216679-67-3, Megafac R 08

RL: MOA (Modifier or additive use); USES (Uses)

(surfactants; pos. photoresist compns. containing norbornene polymers bearing silicon-containing branches)

IT **351187-04-7P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos. **photoresist** compns. containing norbornene polymers bearing silicon-containing branches)

RN 351187-04-7 HCAPLUS

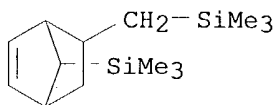
CN 2-Propenoic acid, tetrahydro-2H-pyran-2-yl ester, polymer with 2,5-furandione and trimethyl[[7-(trimethylsilyl)bicyclo[2.2.1]hept-2-en-2-

yl]methyl]silane (9CI) (CA INDEX NAME)

CM 1

CRN 351186-90-8

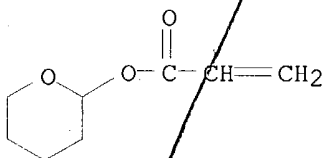
CMF C14 H28 Si2



CM 2

CRN 52858-57-8

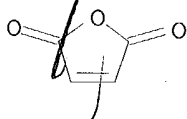
CMF C8 H12 O3



CM 3

CRN 108-31-6

CMF C4 H2 O3



L106 ANSWER 35 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:496392 HCAPLUS

DN 135:99845

TI Positive-working photoresist composition containing alkali-soluble polymer with silyl group

IN Mizutani, Kazuyoshi; Yanami, Shoichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 52 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001188349	A2	20010710	JP 2000-303876	20001003
PRAI	JP 1999-298606	A	19991020		

AB The composition comprises (A) a binder resin having a repeating unit bearing a



structure (CH<sub>2</sub>)<sub>n</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub> (R<sub>1</sub>-3 = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy; n = 0, 1) and a repeating unit bearing a group which decomps. by the action of an acid and increases the solubility in an alkaline developer at the side chain, (B) a compound generating an acid by the action of an actinic ray or radiation, (C) a solvent dissolving A and B, (D) an organic base compound, (E) ≥1 surfactant selected from a fluorosurfactant, a silicone surfactant, and a nonionic surfactant. The composition shows high resolution and gives **patterns** with rectangular cross section and is useful for manufacture of semiconductor device.

IC ICM G03F007-039

ICS C08F030-08; C08K005-00; C08L043-04; C08L101-00; G03F007-004;  
G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

IT Positive **photoresists**

(pos.-working photoresist composition containing binder with silyl group, acid generator, organic base, and surfactant)

IT 1122-58-3, DMAP 3001-72-7, DBN 6674-22-2, DBU 9016-45-9,  
Polyoxyethylene nonyl phenyl **ether** 137462-24-9, Megafac F 176  
216679-67-3, Megafac R 08

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(pos.-working photoresist composition containing binder with silyl group, acid generator, organic base, and surfactant)

IT 249743-11-1P 314295-77-7P 336609-21-3P **336609-24-6P**  
**336609-25-7P 336609-27-9P** 336609-31-5P, tert-Butyl  
acrylate-maleic anhydride-**trimethylallylsilane**-daljsdhf  
copolymer 340829-95-0P **348129-27-1P 348129-35-1P**  
348129-37-3P 348129-40-8P **348129-42-0P 348129-43-1P**  
**348129-45-3P** 348129-49-7P **348129-52-2P**  
**348129-55-5P** 349477-30-1P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos.-working **photoresist** composition containing binder with silyl group, acid generator, organic base, and surfactant)

IT **336609-24-6P 336609-25-7P 336609-27-9P**  
**348129-27-1P 348129-35-1P 348129-42-0P**  
**348129-43-1P 348129-45-3P 348129-52-2P**  
**348129-55-5P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(pos.-working **photoresist** composition containing binder with silyl group, acid generator, organic base, and surfactant)

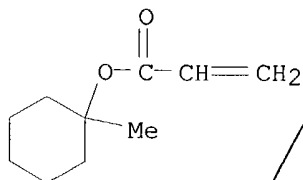
RN 336609-24-6 HCAPLUS

CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

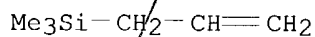
CRN 178889-47-9

CMF C10 H16 O2



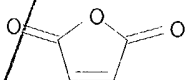
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

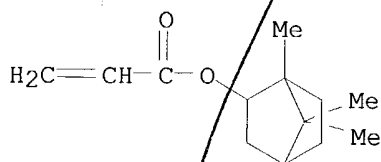
CRN 108-31-6  
CMF C4 H2 O3



RN 336609-25-7 HCAPLUS  
CN 2-Propenoic acid, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, polymer  
with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

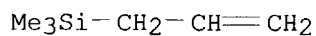
CM 1

CRN 128946-20-3  
CMF C13 H20 O2



CM 2

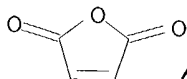
CRN 762-72-1  
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



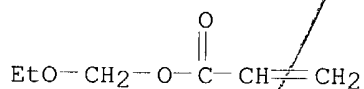
RN 336609-27-9 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

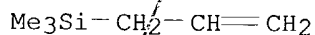
CMF C6 H10 O3



CM 2

CRN 762-72-1

CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



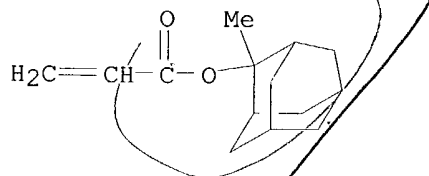
RN 348129-27-1 HCAPLUS

CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

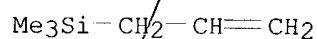
CRN 249562-06-9

CMF C14 H20 O2



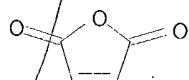
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

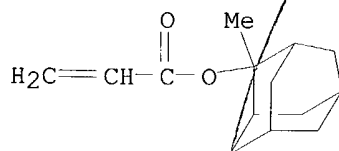
CRN 108-31-6  
CMF C4 H2 O3



RN 348129-35-1 HCAPLUS  
CN 2-Propenoic acid, butyl ester, polymer with 2,5-furandione,  
2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and trimethyl-2-  
propenylsilane (9CI) (CA INDEX NAME)

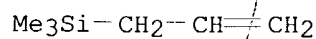
CM 1

CRN 249562-06-9  
CMF C14 H20 O2



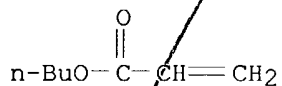
CM 2

CRN 762-72-1  
CMF C6 H14 Si



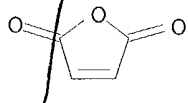
CM 3

CRN 141-32-2  
CMF C7 H12 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3

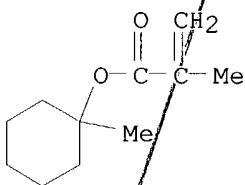


RN 348129-42-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with  
2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

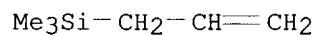
CM 1

CRN 76392-14-8  
CMF C11 H18 O2



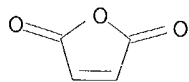
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

CRN 108-31-6  
CMF C4 H2 O3

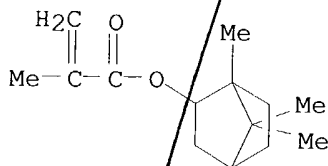


RN 348129-43-1 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester,  
 polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA  
 INDEX NAME)

CM 1

CRN 16868-12-5

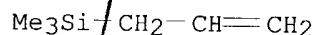
CMF C14 H22 O2



CM 2

CRN 762-72-1

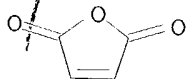
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3

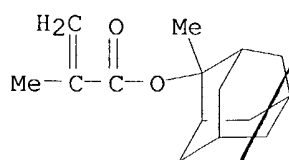


RN 348129-45-3 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA  
 INDEX NAME)

CM 1

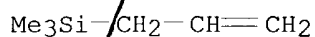
CRN 177080-67-0

CMF C15 H22 O2



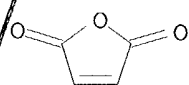
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

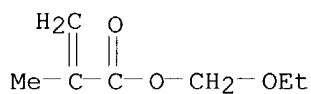
CRN 108-31-6  
CMF C4 H2 O3



RN 348129-52-2 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, ethoxymethyl ester, polymer with  
2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

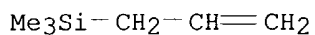
CM 1

CRN 76392-16-0  
CMF C7 H12 O3



CM 2

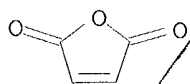
CRN 762-72-1  
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



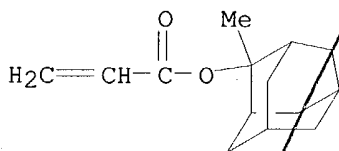
RN 348129-55-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, ethoxymethyl ester, polymer with  
2,5-furandione, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and  
trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

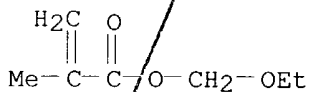
CMF C14 H20 O2



CM 2

CRN 76392-16-0

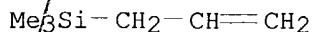
CMF C7 H12 O3



CM 3

CRN 762-72-1

CMF C6 H14 Si

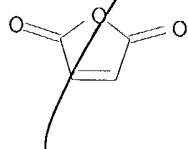


CM 4

CRN 108-31-6

CMF C4 H2 O3





L106 ANSWER 36 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:496391 HCAPLUS

DN 135:99844

TI Positive-working photoresist composition containing **vinyl** copolymer with silyl group

IN Mizutani, Kazuyoshi; Yasunami, Shouichiro

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 42 pp.

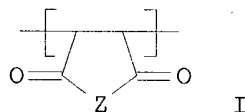
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001188348	A2	20010710	JP 2000-303875	20001003
PRAI	JP 1999-298606	A	19991020		
GI					



AB The photoresist composition comprises (A) a binder resin whose solubility in an alkaline developer increases by the action of an acid and having repeating units  $\text{CH}_2\text{CH}[(\text{CH}_2)_n\text{SiR}_1\text{R}_2\text{R}_3]$  ( $\text{R}_1\text{-3}$  = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy;  $n = 0, 1$ )  $\text{CH}_2\text{CY}(\text{LCO}_2\text{Q})$  ( $\text{Y} = \text{H, Me, cyano, Cl}$ ;  $\text{L} = \text{bond, divalent linkage}$ ;  $\text{Q} = \text{C5-20 tert-alkyl, alkoxyethyl, isobornyl}$ ) and I ( $\text{Z} = \text{O, NR}_3$ ;  $\text{R}_3 = \text{H, OH, alkyl, OSO}_2\text{R}_4$ ;  $\text{R}_4 = \text{alkyl, trihalomethyl}$ ), (B) a compound generating an acid by the action of an actinic ray or radiation, and (C) a solvent dissolving A and B. The composition shows high resolution, less disappearance of rough **pattern** at the resolution limit, and is useful for manufacture of semiconductor devices.

IC ICM G03F007-039

ICS C08F220-10; C08F222-00; C08F230-08; C08K005-00; C08L033-04; C08L035-00; C08L043-04; G03F007-004; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

IT Positive **photoresists**(pos.-working photoresist composition containing **vinyl** copolymer with silyl group)

IT Semiconductor device fabrication

(pos.-working photoresist composition containing **vinyl** copolymer with silyl group and acid generator for manufacture of semiconductor device)

IT 336609-21-3P 336609-24-6P 336609-25-7P  
 336609-27-9P 340829-96-1P 348129-27-1P  
 348129-40-8P 348129-42-0P 348129-43-1P  
 348129-52-2P 348129-55-5P 348137-36-0P 348137-37-1P  
 348137-38-2P 348137-39-3P 348137-41-7P 348137-43-9P  
 348137-44-0P 348137-46-2P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (pos.-working photoresist composition containing **vinyl** copolymer with silyl group and acid generator)

IT 66003-78-9, Triphenylsulfonium triflate 144089-15-6 144317-44-2,  
 Triphenylsulfonium nonaflate 153698-46-5, Triphenylsulfonium  
 pentafluorophenylsulfonate 258341-95-6 258872-05-8 287925-54-6,  
 Bis(p-tert-amylphenyl)iodonium tosylate 343629-51-6 348129-65-7  
 348137-47-3  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working photoresist composition containing **vinyl** copolymer with silyl group and acid generator)

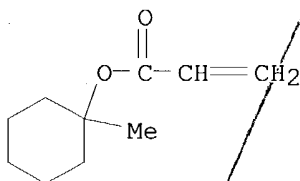
IT 336609-24-6P 336609-25-7P 336609-27-9P  
 340829-96-1P 348129-27-1P 348129-42-0P  
 348129-43-1P 348129-52-2P 348129-55-5P  
 348137-38-2P 348137-39-3P 348137-44-0P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (pos.-working photoresist composition containing **vinyl** copolymer with silyl group and acid generator)

RN 336609-24-6 HCAPLUS  
 CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 178889-47-9

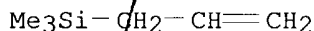
CMF C10 H16 O2



CM 2

CRN 762-72-1

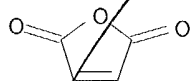
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



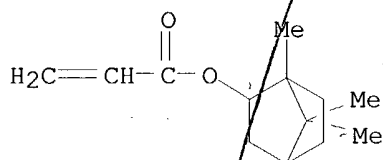
RN 336609-25-7 HCAPLUS

CN 2-Propenoic acid, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 128946-20-3

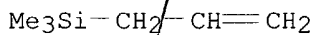
CMF C13 H20 O2



CM 2

CRN 762-72-1

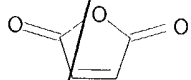
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



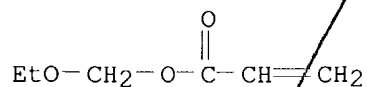
RN 336609-27-9 HCAPLUS

CN 2-Propenoic acid, ethoxymethyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 101181-06-0

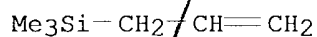
CMF C6 H10 O3



CM 2

CRN 762-72-1

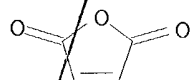
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



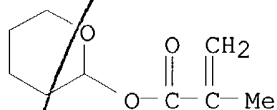
RN 340829-96-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

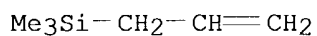
CMF C9 H14 O3



CM 2

CRN 762-72-1

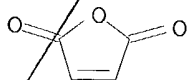
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3

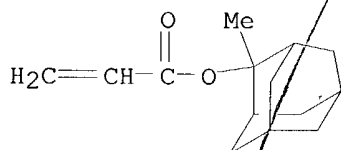


RN 348129-27-1 HCAPLUS  
 CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

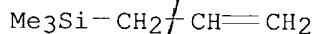
CMF C14 H20 O2



CM 2

CRN 762-72-1

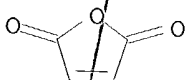
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3

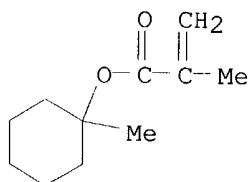


RN 348129-42-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

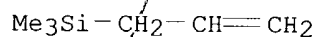
CRN 76392-14-8

CMF C11 H18 O2



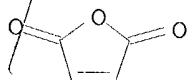
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

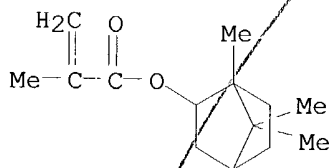
CRN 108-31-6  
CMF C4 H2 O3



RN 348129-43-1 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester,  
polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA  
INDEX NAME)

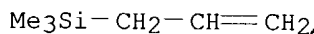
CM 1

CRN 16868-12-5  
CMF C14 H22 O2



CM 2

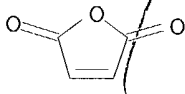
CRN 762-72-1  
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3



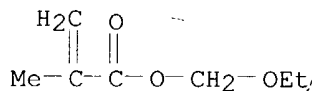
RN 348129-52-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, ethoxymethyl ester, polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 76392-16-0

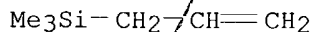
CMF C7 H12 O3



CM 2

CRN 762-72-1

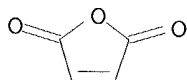
CMF C6 H14 Si



CM 3

CRN 108-31-6

CMF C4 H2 O3

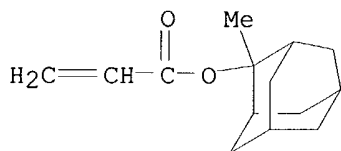


RN 348129-55-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, ethoxymethyl ester, polymer with 2,5-furandione, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

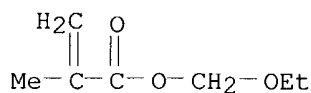
CM 1

CRN 249562-06-9  
CMF C14 H20 O2



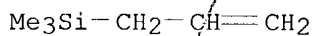
CM 2

CRN 76392-16-0  
CMF C7 H12 O3



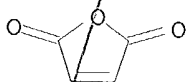
CM 3

CRN 762-72-1  
CMF C6 H14 Si



CM 4

CRN 108-31-6  
CMF C4 H2 O3

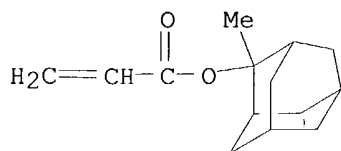


RN 348137-38-2 HCAPLUS  
CN 2-Propenoic acid, methyl ester, polymer with 2,5-furandione,  
2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate and trimethyl-2-  
propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9  
CMF C14 H20 O2

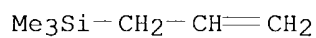




CM 2

CRN 762-72-1

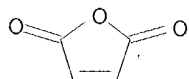
CMF C6 H14 Si



CM 3

CRN 108-31-6

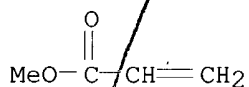
CMF C4 H2 O3



CM 4

CRN 96-33-3

CMF C4 H6 O2



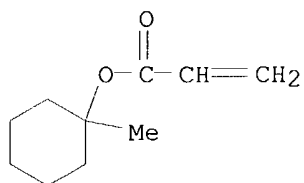
RN 348137-39-3 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with 2,5-furandione, 1-methylcyclohexyl 2-propenoate and trimethyl-2-propenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 178889-47-9

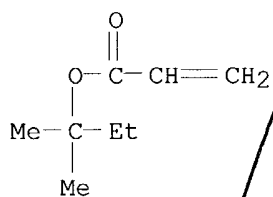
CMF C10 H16 O2



CM 2

CRN 7383-26-8

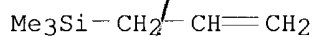
CMF C8 H14 O2



CM 3

CRN 762-72-1

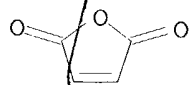
CMF C6 H14 Si



CM 4

CRN 108-31-6

CMF C4 H2 O3



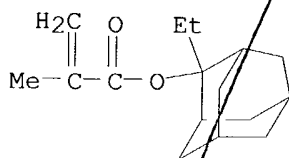
RN 348137-44-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
polymer with 2,5-furandione and trimethyl-2-propenylsilane (9CI) (CA  
INDEX NAME)

CM 1

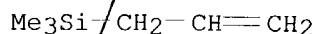
CRN 209982-56-9

CMF C16 H24 O2



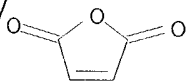
CM 2

CRN 762-72-1  
CMF C6 H14 Si



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 37 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:208019 HCAPLUS  
DN 134:245232  
TI Radiation-sensitive resin composition as chemically-amplified photoresist  
with superior dry etching resistance and resolution for deep UV  
lithography  
IN Douki, Katsuji; Murata, Kiyoshi; Ishii, Hiroyuki; Kajita, Toru; Shimokawa,  
Tsutomu  
PA JSR Corporation, Japan  
SO Eur. Pat. Appl., 52 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1085379	A1	20010321	EP 2000-120000	20000914
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001109157	A2	20010420	JP 1999-291291	19991013
	JP 2001209181	A2	20010803	JP 2000-277966	20000913
	US 6482568	B1	20021119	US 2000-662160	20000914
PRAI	JP 1999-264110	A	19990917		
	JP 1999-291291	A	19991013		
	JP 1999-325222	A	19991116		
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A radiation-sensitive resin composition comprises (a) a resin containing an acid-dissociable group which is insol. or scarcely soluble in alkali and becomes alkali soluble when the acid-dissociable group dissociates, comprising the following recurring unit I, recurring unit II, and at least one of the recurring units III and IV (A, B = H, C1-4-alkyl; X, Y = H, monovalent O or N containing polar group, X joining together with Y may form dicarboxylic anhydride group; n = 0-2; R1 = H, CH3; R2 = CR33; R3 = monovalent alicyclic hydrocarbon group having 4-20 carbon atoms, its derivative, C1-4-alkyl; R4 = divalent hydrocarbon group having alicyclic skeleton containing 3-15 carbons), (b) a photoacid generator, (c) an acid diffusion controller, and (d) alicyclic additive. The radiation-sensitive resin composition is suitable for use as a chemical-amplified resist showing sensitivity

to active radiation such as deep UV rays represented by a KrF excimer laser or ArF excimer laser, exhibiting superior dry etching resistance without being affected by types of etching gas, having high radiation transmittance, exhibiting excellent basic characteristics as a resist such as sensitivity, resolution, and pattern shape, possessing excellent storage stability as a composition, and exhibiting sufficient adhesion to substrates.

IC ICM G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38

IT **Photoresists**

(UV; copolymer compns. as chemical-amplified photoresist with superior dry etching resistance, sensitivity and resolution properties for deep UV lithog.)

IT 103-76-4, 1-(2-Hydroxyethyl)piperazine 611-36-9, 4-Hydroxyquinoline  
1116-76-3, Tri-n-octylamine 3033-62-3, Bis(2-dimethylaminoethyl)  
**ether** 7560-83-0, Methyldicyclohexylamine 193810-83-2  
330576-56-2

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(acid diffusion controller; copolymer compns. as chemical-amplified photoresist with superior dry etching resistance, sensitivity and resolution properties for deep UV lithog.)

IT 330576-37-9P 330576-38-0P 330576-39-1P  
330576-41-5P 330576-42-6P 330576-43-7P  
330576-44-8P 330576-46-0P 330576-47-1P  
330576-48-2P 330576-49-3P 330576-51-7P  
330576-52-8P 330576-54-0P 330576-55-1P

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
**SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)  
(copolymer compns. as chemical-amplified **photoresist** with superior dry etching **resistance**, sensitivity and resolution properties for deep UV lithog.)

IT 330576-37-9P 330576-38-0P 330576-39-1P  
330576-41-5P 330576-43-7P 330576-44-8P  
330576-46-0P 330576-47-1P 330576-48-2P  
330576-49-3P 330576-51-7P 330576-52-8P  
330576-55-1P

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
**SPN (Synthetic preparation)**; TEM (Technical or engineered material

use); **PREP (Preparation)**; PROC (Process); USES (Uses)  
 (copolymer compns. as chemical-amplified **photoresist** with  
 superior dry etching **resistance**, sensitivity and resolution  
 properties for deep UV lithog.)

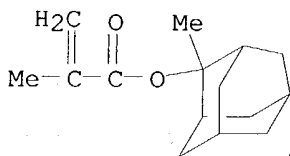
RN 330576-37-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-  
 dimethanonaphthalene-2-methanol (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

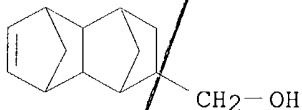
CMF C15 H22 O2



CM 2

CRN 7329-04-6

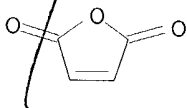
CMF C13 H18 O



CM 3

CRN 108-31-6

CMF C4 H2 O3



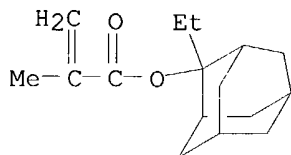
RN 330576-38-0 HCAPLUS

CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, 1,2,3,4,4a,5,8,8a-  
 octahydro-, 1,1-dimethylethyl ester, polymer with bicyclo[2.2.1]hept-5-en-  
 2-ol, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and  
 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9

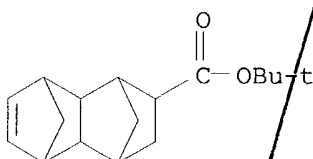
CMF C16 H24 O2



CM 2

CRN 195057-79-5

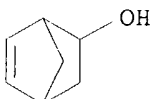
CMF C17 H24 O2



CM 3

CRN 13080-90-5

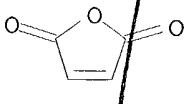
CMF C7 H10 O



CM 4

CRN 108-31-6

CMF C4 H2 O3



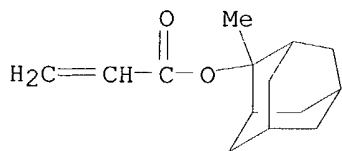
RN 330576-39-1 HCAPLUS

CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with 2,5-furandione, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate and 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene-2-methanol (9CI) (CA INDEX NAME)

CM 1

CRN 249562-06-9

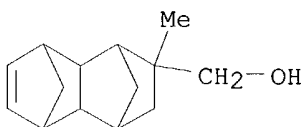
CMF C14 H20 O2



CM 2

CRN 231296-21-2

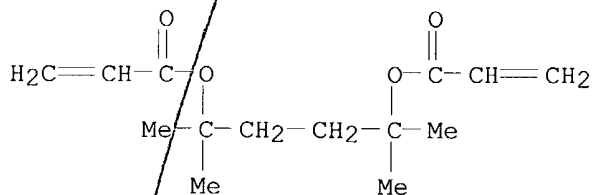
CMF C14 H20 O



CM 3

CRN 188837-15-2

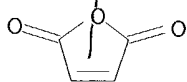
CMF C14 H22 O4



CM 4

CRN 108-31-6

CMF C4 H2 O3

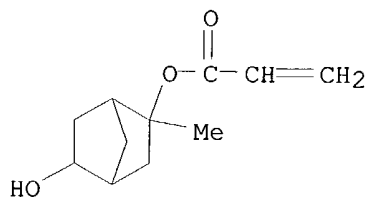


RN 330576-41-5 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2,5-furandione, 5-hydroxy-2-methylbicyclo[2.2.1]hept-2-yl 2-propenoate and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalen-2-ol (9CI) (CA INDEX NAME)

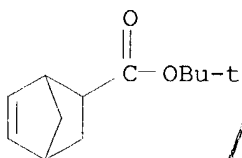
CM 1

CRN 330576-40-4  
CMF C11 H16 O3



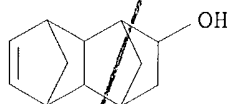
CM 2

CRN 154970-45-3  
CMF C12 H18 O2



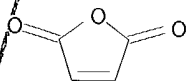
CM 3

CRN 7388-87-6  
CMF C12 H16 O



CM 4

CRN 108-31-6  
CMF C4 H2 O3

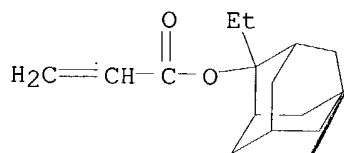


RN 330576-43-7 HCAPLUS  
CN 2-Propenoic acid, 2-ethyltricyclo[3.3.1.1.3]dec-2-yl ester, polymer with 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene-2-carbonitrile (9CI) (CA INDEX NAME)



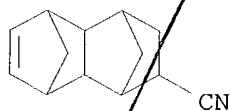
CM 1

CRN 303186-14-3  
CMF C15 H22 O2



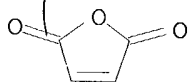
CM 2

CRN 40828-04-4  
CMF C13 H15 N



CM 3

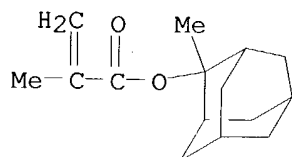
CRN 108-31-6  
CMF C4 H2 O3



RN 330576-44-8 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalen-2-ol (9CI) (CA INDEX NAME)

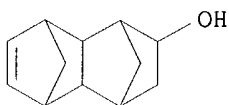
CM 1

CRN 177080-67-0  
CMF C15 H22 O2



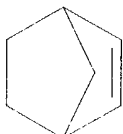
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CMF C12 H16 O



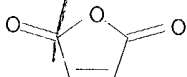
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

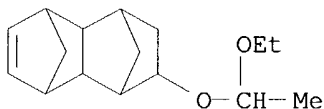
CRN 108-31-6  
CMF C4 H2 O3



RN 330576-46-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2-(1-ethoxyethoxy)-1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene and 2,5-furandione (9CI) (CA INDEX NAME)

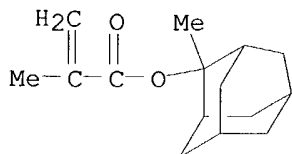
CM 1

CRN 330576-45-9  
CMF C16 H24 O2



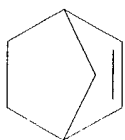
CM 2

CRN 177080-67-0  
CMF C15 H22 O2



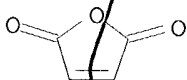
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3

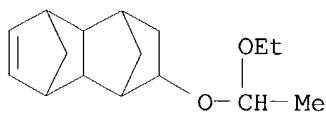


RN 330576-47-1 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, butyl ester, polymer with 2-(1-ethoxyethoxy)-1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene, 2,5-furandione and 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

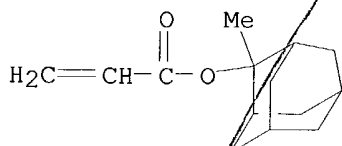
CM 1

CRN 330576-45-9  
CMF C16 H24 O2



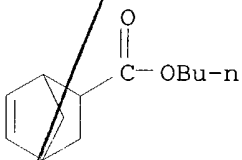
CM 2

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CMF C14 H20 O2



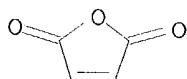
CM 3

CRN 37981-18-3  
CMF C12 H18 O2



CM 4

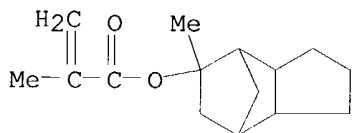
CRN 108-31-6  
CMF C4 H2 O3



RN 330576-48-2 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, octahydro-5-methyl-4,7-methano-1H-inden-5-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalen-2-ol (9CI) (CA INDEX NAME)

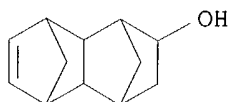
CM 1

CRN 280123-21-9  
CMF C15 H22 O2



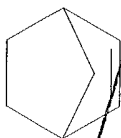
CM 2

CRN 7388-87-6  
CMF C12 H16 O



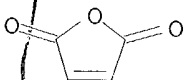
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

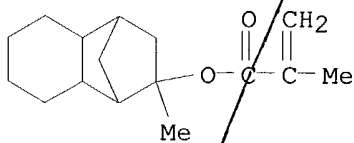
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CMF C4 H2 O3



RN 330576-49-3 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, decahydro-2-methyl-1,4-methanonaphthalen-2-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene-2-methanol (9CI)  
(CA INDEX NAME)

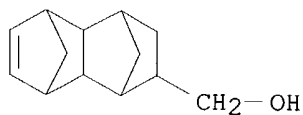
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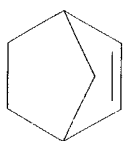
CM 2

CRN 7329-04-6  
CMF C13 H18 O



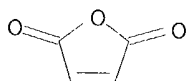
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

CRN 108-31-6  
CMF C4 H2 O3

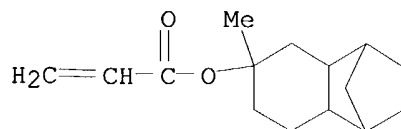


RN 330576-51-7 HCAPLUS

CN 2-Propenoic acid, decahydro-6-methyl-1,4-methanonaphthalen-6-yl ester, polymer with bicyclo[2.2.1]hept-2-ene, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalen-2-ol (9CI) (CA INDEX NAME)

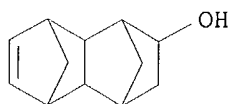
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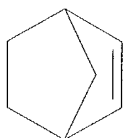
CM 2

CRN 7388-87-6  
CMF C12 H16 O



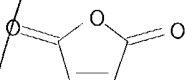
CM 3

CRN 498-66-8  
CMF C7 H10



CM 4

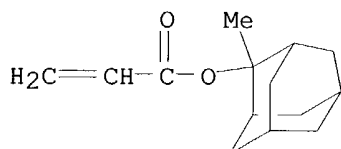
CRN 108-31-6  
CMF C4 H2 O3



RN 330576-52-8 HCAPLUS  
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalen-2-ol (9CI) (CA INDEX NAME)

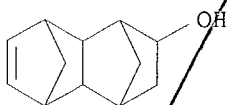
CM 1

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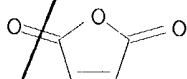
CM 2

CRN 7388-87-6  
CMF C12 H16 O



CM 3

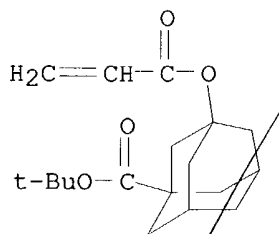
CRN 108-31-6  
CMF C4 H2 O3



RN 330576-55-1 HCAPLUS  
CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1-carboxylic acid, 3-[(1-oxo-2-propenyl)oxy]-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene-2-methanol (9CI) (CA INDEX NAME)

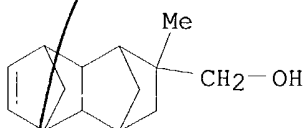
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CM 2

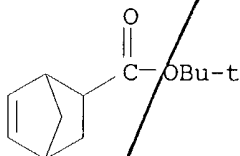
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CMF C14 H20 O





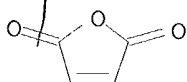
CM 3

CRN 154970-45-3  
CMF C12 H18 O2



CM 4

CRN 108-31-6  
CMF C4 H2 O3



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L106 ANSWER 38 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:178377 HCAPLUS

DN 134:229705

TI Chemically amplified photoresist compositions and process for the  
formation of stable photoresist **patterns**

IN Takechi, Satoshi; Kotachi, Akiko; Nozaki, Koji; Yano, Ei; Watanabe, Keiji;  
Namiki, Takahisa; Igarashi, Miwa; Makino, Yoko; Takahashi, Makoto

PA Fujitsu Limited, Japan

SO U.S., 55 pp., Cont.-in-part of U.S. 6,013,416.

CODEN: USXXAM

DT Patent

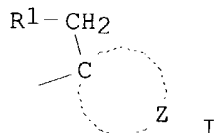
LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6200725	B1	20010313	US 1997-969368	19971128
	JP 09090637	A2	19970404	JP 1995-312722	19951130
	JP 3297272	B2	20020702		
	JP 09073173	A2	19970318	JP 1996-50264	19960307
	US 6013416	A	20000111	US 1996-673739	19960627
	US 5968713	A	19991019	US 1997-896833	19970718
	US 2001003640	A1	20010614	US 2000-739259	20001219
	US 6329125	B2	20011211		
PRAI	JP 1995-162287	A	19950628		
	JP 1995-178717	A	19950714		
	JP 1995-312722	A	19951130		
	JP 1996-50264	A	19960307		
	US 1996-673739	A2	19960627		

JP 1996-320105 A 19961129  
US 1997-969368 A3 19971128

GI



AB An alkali-developable, chemical amplified photoresist composition which comprises

(1) an alkali-insol. polymer or copolymer comprising a structural unit containing a protected alkali-soluble group in which unit a protective moiety of

said protected alkali-soluble group contains a group represented by I ( R1 = CH3, C2H5, Pr or i-Pr which may be substituted, Z = atoms necessary to complete an alicyclic hydrocarbon group along with a carbon atom) and (2) a photoacid generator capable of being decomposed upon exposure to a **patterning** radiation to produce an acid capable of causing cleavage of said protective moiety. The resist composition can exhibit a high sensitivity (not more than 5 mJ/cm2) and therefore is particularly suitable for ArF lithog. and also can exhibit stable **patterning** properties.

IC ICM G03F007-039

NCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT **Photoresists**

(chemical amplified photoresist compns. comprising alkali-insol. alkali-developable polymers or copolymers and photoacid generator)

IT 66003-78-9, Triphenylsulfonium trifluoromethane sulfonate

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(photoacid generator; preparation of alkali-developable chemical amplified photoresist compns. and process for formation photoresist **patterns**)

IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate 66003-76-7, Diphenyliodonium trifluoromethane sulfonate 160481-39-0

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(photoacid generator; preparation of chemical amplified photoresist compns.

and

process for formation photoresist **patterns**)

IT 177080-68-1P, 2-Methyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 181020-29-1P 181531-12-4P, Methacrylic acid-2-methyl-2-adamantyl methacrylate copolymer 181531-13-5P 186585-40-0P 186585-44-4P 186585-47-7P 186585-49-9P 186585-51-3P 186585-88-6P, tert-Butyl methacrylate-methacrylic acid-2-methyl-2-adamantyl methacrylate copolymer 186585-90-0P 186585-91-1P 186585-92-2P 186585-93-3P 186585-96-6P 186585-97-7P **186585-98-8P 186585-99-9P** 186586-00-5P 186586-01-6P 186586-02-7P 186586-03-8P 186586-04-9P 186586-06-1P 186586-08-3P 186586-09-4P 186586-11-8P 209982-55-8P, 2-Butyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 209982-57-0P,

2-Ethyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer  
 209982-58-1P, 2-Butyl-2-adamantyl methacrylate-methacrylic acid copolymer  
**209982-59-2P** 209982-60-5P **238080-51-8P** 329690-34-8P  
 329690-36-0P 329690-37-1P 329690-38-2P

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
**SPN (Synthetic preparation)**; TEM (Technical or engineered material  
 use); **PREP (Preparation)**; PROC (Process); USES (Uses)

(preparation of alkali-insol. polymers and copolymers for chemical amplified  
**photoresist** composition)

IT 59269-51-1, Poly(vinyl phenol) 311814-86-5

RL: PEP (Physical, engineering or chemical process); TEM (Technical or  
 engineered material use); PROC (Process); USES (Uses)

(preparation of chemical amplified photoresist compns. and process for  
 formation photoresist **patterns**)

IT **186585-98-8P 186585-99-9P 209982-59-2P**  
**238080-51-8P**

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
**SPN (Synthetic preparation)**; TEM (Technical or engineered material  
 use); **PREP (Preparation)**; PROC (Process); USES (Uses)

(preparation of alkali-insol. polymers and copolymers for chemical amplified  
**photoresist** composition)

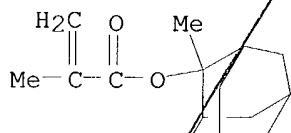
RN 186585-98-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with 2-ethenyl-4,4-dimethyl-5(4H)-oxazolone (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

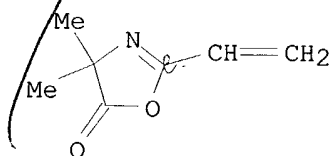
CMF C15 H22 O2



CM 2

QRN 29513-26-6

CMF C7 H9 N O2



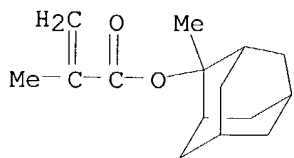
RN 186585-99-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with 2-ethenyl-5,6-dihydro-5,5-dimethyl-4H-1,3-oxazine (9CI) (CA  
 INDEX NAME)

CM 1

CRN 177080-67-0

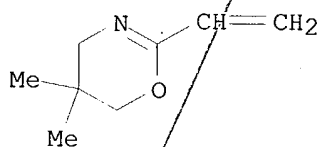
CMF C15 H22 O2



CM 2

CRN 90154-90-8

CMF C8 H13 N O



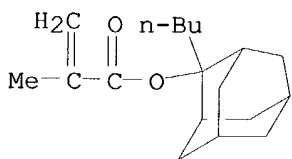
RN 209982-59-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-butyltricyclo[3.3.1.3,7]dec-2-yl ester, polymer with dihydro-3-methylene-2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 209982-54-7

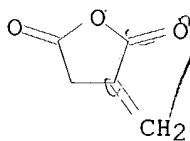
CMF C18 H28 O2



CM 2

CRN 2170-03-8

CMF C5 H4 O3

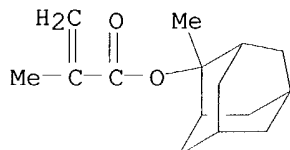


RN 238080-51-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
 polymer with dihydro-3-methylene-2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 177080-67-0

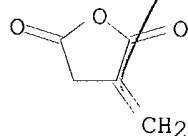
CMF C15 H22 O2



CM 2

CRN 2170-03-8

CMF C5 H4 O3



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L106 ANSWER 39 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:823000 HCAPLUS

DN 133:367848

TI Positive-working resist composition

IN Sato, Kenichiro; Kodama, Kunihiro; Aogo, Toshiaki

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

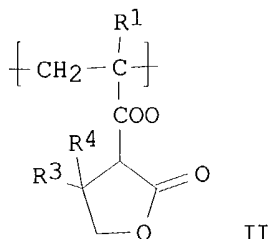
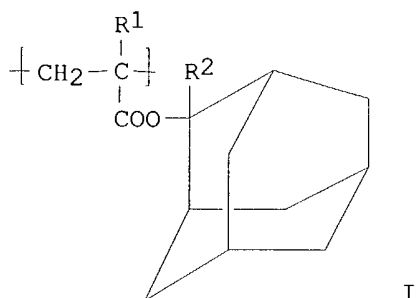
DT Patent

LA Japanese

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000321771	A2	20001124	JP 1999-127296	19990507
	US 6596458	B1	20030722	US 2000-563436	20000503
PRAI	JP 1999-127296	A	19990507		
	JP 1999-186607	A	19990630		
	JP 1999-193601	A	19990707		
	JP 1999-193602	A	19990707		
	JP 1999-193603	A	19990707		

GI



- AB The title resist composition contains (a) a resin which has repeating units I, II, and  $\geq 1$  selected from  $\text{CH}_2\text{CR}_1(\text{CO}_2\text{H})$ ,  $\text{CH}_2\text{CR}_1[\text{XOCR}_5\text{R}_7\text{CR}_6\text{R}_8\text{O}(\text{CR}_9\text{R}_{10}\text{CR}_{11}\text{R}_{12}\text{O})\text{mR}]$ ,  $\text{CH}_2\text{CR}_1(\text{ZR}_{13}\text{AR}_{14})$ , and  $\text{CH}_2\text{CR}_1(\text{CO}_2\text{R}_{15}\text{SO}_2\text{OR}_{16})$  [ $\text{R}_1 = \text{H}, \text{Me}$ ;  $\text{R}_2 = \text{C}_1\text{-4 alkyl}$ ;  $\text{R}_3, \text{R}_4 = \text{H}, \text{C}_1\text{-4 alkyl}$ ;  $\text{R}_5\text{-12} = \text{H}, (\text{substituted}) \text{alkyl}$ ;  $\text{R} = \text{H}, (\text{substituted}) \text{alkyl}, (\text{substituted}) \text{cycloalkyl}, (\text{substituted}) \text{aryl}, (\text{substituted}) \text{aralkyl}$ ;  $\text{m} = 1\text{-10}$ ;  $\text{X} = \text{single bond}, (\text{substituted}) \text{alkylene}, (\text{substituted}) \text{cycloalkylene}, (\text{substituted}) \text{arylene}, \text{divalent group which is composed of } \geq 1 \text{ group selected from ether, thioether, carbonyl, ester, amide, sulfonamide, urethane, and urea groups and is not decomposed by the action of acid}$ ;  $\text{Z} = \text{single bond, ether, ester, amide, alkylene, divalent group composed of these groups}$ ;  $\text{R}_{13} = \text{single bond, alkylene, arylene, divalent group composed of these groups}$ ;  $\text{R}_{14} = (\text{substituted}) \text{alkyl}, (\text{substituted}) \text{cycloalkyl}, (\text{substituted}) \text{aryl}, (\text{substituted}) \text{aralkyl}$ ;  $\text{R}_{15} = \text{alkylene, arylene, divalent group composed of these groups}$ ;  $\text{R}_{16} = \text{H}, (\text{substituted}) \text{alkyl}, (\text{substituted}) \text{cycloalkyl}, (\text{substituted}) \text{alkenyl}, (\text{substituted}) \text{aryl}, (\text{substituted}) \text{aralkyl}$ ;  $\text{A} = \text{CONHSO}_2, \text{SO}_2\text{NHCO}, \text{NHCONHSO}_2, \text{SO}_2\text{NHCONH}, \text{OCONHSO}_2, \text{SO}_2\text{NHCO}_2, \text{SO}_2\text{NHSO}_2]$  and of which the dissoln. rate to alkaline developing solns. is increased by the action of acid and (b) a compound that generates an acid by irradiation with actinic ray or radiation. The composition shows improved applicability to micro-photo-fabrication using far UV rays, especially ArF excimer laser beams and developability and provides resist **patterns** with good profile and high resolution contact holes.
- IC ICM G03F007-039  
ICS C08F220-04; C08F220-18; C08F220-28; C08K005-00; C08L033-02;  
C08L033-04; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- IT Positive **photoresists**  
Surfactants  
(pos. photoresist composition containing acrylic polymer and acid generator)
- IT 9016-45-9, Polyoxyethylene nonyl phenyl **ether** 137462-24-9,  
Megafac F 176 216679-67-3, Megafac R08  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material)

use); USES (Uses)

(pos. photoresist composition containing acrylic polymer and acid generator)  
 IT 288303-52-6P, Butyrolactone methacrylate-methacrylic acid-2-methyl-2-adamantyl methacrylate copolymer 307976-24-5P 307976-25-6P  
 307976-26-7P 307976-27-8P 307976-28-9P 307976-29-0P 307976-30-3P  
 307976-32-5P 307976-33-6P 307976-34-7P **307976-36-9P**  
 307976-37-0P 307976-39-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (pos. photoresist composition containing acrylic polymer and acid generator)

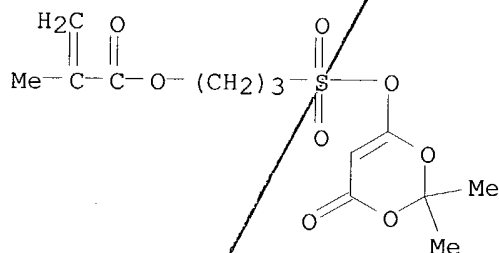
IT **307976-36-9P**  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (pos. photoresist composition containing acrylic polymer and acid generator)

RN 307976-36-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-[[[(2,2-dimethyl-4-oxo-4H-1,3-dioxin-6-yl)oxy]sulfonyl]propyl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

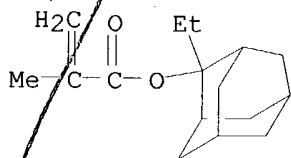
CM 1

CRN 307976-35-8  
 CMF C13 H18 O8 S



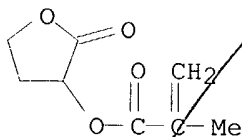
CM 2

CRN 209982-56-9  
 CMF C16 H24 O2



CM 3

CRN 195000-66-9  
 CMF C8 H10 O4



L106 ANSWER 40 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:470405 HCAPLUS

DN 1/33:105930

TI Preparations and compositions of lithographic resists containing photosensitive polymers with cyclic **ether** backbone

IN Choi, Sang Joon; Chung, Dong Hang; Lee, Si Hyung

PA Samsung Electronics Co., Ltd., S. Korea

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191732	A2	20000711	JP 1999-364811	19991222
	TW 476022	B	20020211	TW 1999-88107907	19990515
	US 6287747	B1	20010911	US 1999-465926	19991217
PRAI	KR 1998-58045	A	19981224		

AB The chemical amplifiable photoresists suitable for micro-patterning by dry etching with ArF excimer laser beams in the semiconductor device fabrication, comprise a (meth)acrylic acid ester-based copolymer having cyclic **ether** units of CH<sub>2</sub>Z (Z = tetrahydropyran-3,5-diyl group bearing carboxylic acid esters on the 3- and 5-position, resp., provided that at least 1 of the esters is C7-20 alicyclic hydrocarbonyl type) in the backbone and photoacid generator (PAG). Thus, heating diadamantyl 2,2'-(oxydimethylene)diacrylate 18.2 with diethoxyethyl 2,2'-(oxydimethylene)diacrylate 10.0 and methacrylic acid 2.6 g in THF in the presence of AIBN at reflux for .apprx.24 h gave a copolymer having cyclic **ether** units, weight-average mol. weight of 15,400 and polydispersity of 2.4. Dissolving the copolymer 1.0, triphenylsulfonium triflate (PAG) 0.02 and triisobutylamine 0.002 in propylene glycol monomethyl **ether** acetate 7 g, and filtering gave a photoresist which was coated on a silicon wafer to 0.45  $\mu$ m thickness, pre-baked at 110° for 90 s, exposed with ArF excimer laser, post-exposure baked at 120° for 90 s and developed with a 2.38% tetramethylammonium hydroxide solution to give line-and-space **pattern** of 0.30  $\mu$ m under an exposure dose of .apprx.17 mJ/cm<sup>2</sup>.

IC ICM C08F220-18

ICS C08F236-20; C08K005-36; C08L033-06; G03F007-039; H01L021-027

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74, 76

ST lithog resist photosensitive polymer cyclic **ether** unit; semiconductor device manuf dry etching resist chem amplification; photoresist dry etching ArF excimer laser photocurable methacrylate copolymer; adamantyl methacrylate **ether** dimer copolymer photoresist

IT Excimer lasers

(ArF; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)



- IT **Ethers, uses**  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (cyclic, polymers; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT Sulfonium compounds  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoacid generator; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT Etching  
**Photoresists**  
 Resists  
 Semiconductor device fabrication  
 (preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT Acids, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (strong; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT Amines, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (tertiary, crosslinking co-catalyst; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT 102-71-6, uses 111-42-2, uses 121-44-8, uses 1116-40-1, Triisobutylamine 25549-16-0, Triisooctylamine  
 RL: CAT (Catalyst use); USES (Uses)  
 (crosslinking co-catalyst; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT 34684-40-7, N-Hydroxysuccinimide triflate 66003-76-7, Diphenyliodonium triflate 66003-78-9, Triphenylsulfonium triflate 144317-44-2, Triphenylsulfonium nonaflate 157959-61-0 162845-55-8, Triphenylsulfonium antimonate 168706-59-0 259229-69-1 259229-70-4D, salts  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoacid generator; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT 142-68-7DP, Tetrahydropyran, derivs., polymers  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT **254109-23-4P**, Diadamantyl 2,2'-(oxydimethylene)diacrylate-di-tert-butyl 2,2'-(oxydimethylene)diacrylate copolymer **282118-22-3P**  
**282118-23-4P** **282118-24-5P** **282118-25-6P**  
**282118-26-7P** **282118-27-8P** **282118-28-9P**  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (preps. and compns. of lithog. **resists** containing photosensitive polymers with cyclic **ether** backbone)
- IT 1663-39-4 5888-33-5, Isobornyl acrylate 30525-89-4, Paraformaldehyde 52351-91-4, 1-Ethoxyethyl acrylate 121601-93-2, 1-Adamantyl acrylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant; preps. and compns. of lithog. resists containing photosensitive polymers with cyclic **ether** backbone)
- IT **254109-23-4P**, Diadamantyl 2,2'-(oxydimethylene)diacrylate-di-tert-

butyl 2,2'-(oxydimethylene)diacrylate copolymer **282118-22-3P**

**282118-23-4P 282118-24-5P 282118-25-6P**

**282118-26-7P 282118-27-8P 282118-28-9P**

RL: **IMF (Industrial manufacture)**; POF (Polymer in formulation);

PRP (Properties); TEM (Technical or engineered material use); **PREP**

**(Preparation)**; USES (Uses)

(prepns. and compns. of lithog. **resists** containing photosensitive polymers with cyclic **ether** backbone)

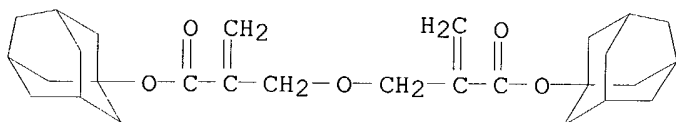
RN 254109-23-4 HCAPLUS

CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1,1-dimethylethyl) ester, polymer with bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl) 2,2'-[oxybis(methylene)]bis[2-propenoate] (9CI) (CA INDEX NAME)

CM 1

CRN 149513-35-9

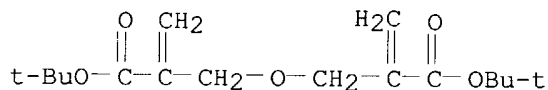
CMF C28 H38 O5



CM 2

CRN 129743-64-2

CMF C16 H26 O5



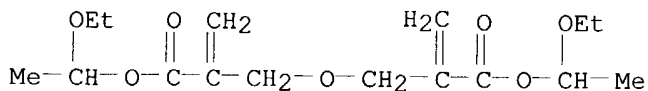
RN 282118-22-3 HCAPLUS

CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1-ethoxyethyl) ester, polymer with bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl) 2,2'-[oxybis(methylene)]bis[2-propenoate] (9CI) (CA INDEX NAME)

CM 1

CRN 282118-21-2

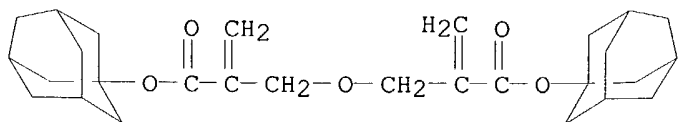
CMF C16 H26 O7



CM 2

CRN 149513-35-9

CMF C28 H38 O5

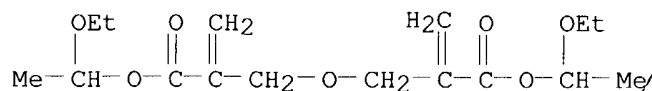


RN 282118-23-4 HCAPLUS  
 CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1-ethoxyethyl) ester,  
 polymer with rel-bis[(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl]  
 2,2'-[oxybis(methylene)]bis[2-propenoate] (9CI) (CA INDEX NAME)

CM 1

CRN 282118-21-2

CMF C16 H26 O7

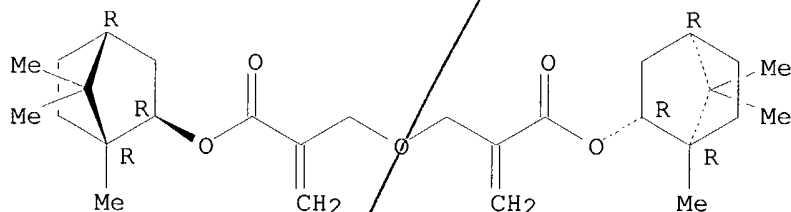


CM 2

CRN 157646-99-6

CMF C28 H42 O5

Relative stereochemistry.

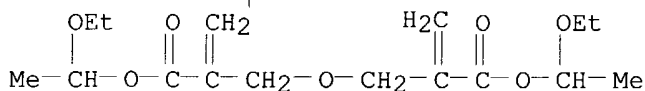


RN 282118-24-5 HCAPLUS  
 CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1-ethoxyethyl) ester,  
 polymer with bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl) 2,2'-  
 [oxybis(methylene)]bis[2-propenoate] and 2-methyl-2-propenoic acid (9CI)  
 (CA INDEX NAME)

CM 1

CRN 282118-21-2

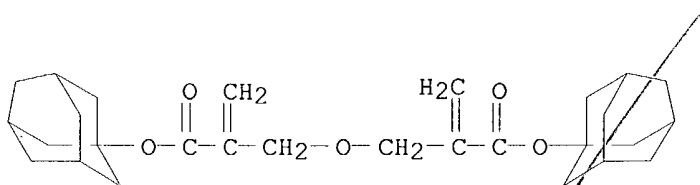
CMF C16 H26 O7



CM 2

CRN 149513-35-9

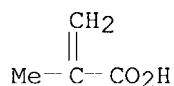
CMF C28 H38 O5



CM 3

CRN 79-41-4

CMF C4 H6 O2



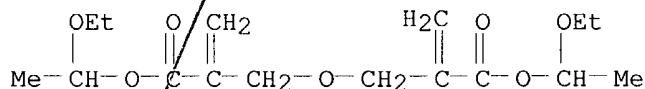
RN 282118-25-6 HCAPLUS

CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1-ethoxyethyl) ester, polymer with rel-bis[(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl] 2,2'-[oxybis(methylene)]bis[2-propenoate] and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 282118-21-2

CMF C16 H26 O7

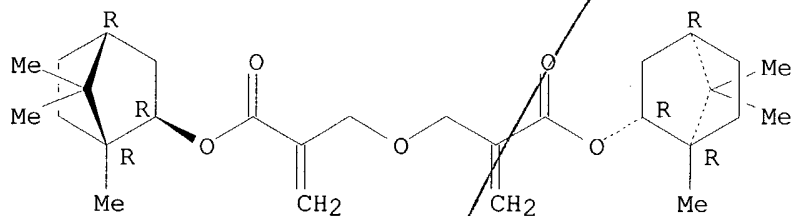


CM 2

CRN 157646-99-6

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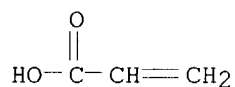
Relative stereochemistry.



CM 3

CRN 79-10-7

CMF C3 H4 O2



RN 282118-26-7 HCAPLUS

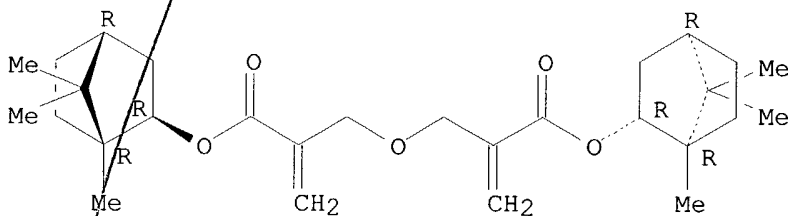
CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis[(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl] ester, rel-, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate and 2-methyl-2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 157646-99-6

CMF C28 H42 O5

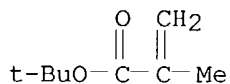
Relative stereochemistry.



CM 2

CRN 585-07-9

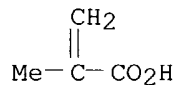
CMF C8 H14 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2



RN 282118-27-8 HCAPLUS

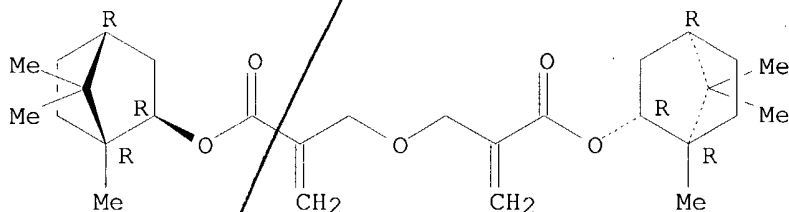
CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis[(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl] ester, rel-, polymer with 2-methyl-2-propenoic acid and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 157646-99-6

CMF C28 H42 O5

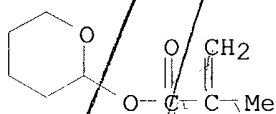
Relative stereochemistry.



CM 2

CRN 52858-59-0

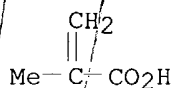
CMF C9 H14 O3



CM 3

CRN 79-41-4

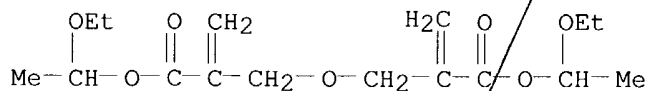
CMF C4 H6 O2



RN 282118-28-9 HCAPLUS  
 CN 2-Propenoic acid, 2,2'-[oxybis(methylene)]bis-, bis(1-ethoxyethyl) ester,  
 polymer with rel-bis[(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl]  
 2,2'-[oxybis(methylene)]bis[2-propenoate], 2-hydroxyethyl  
 2-methyl-2-propenoate and 2-methyl-2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

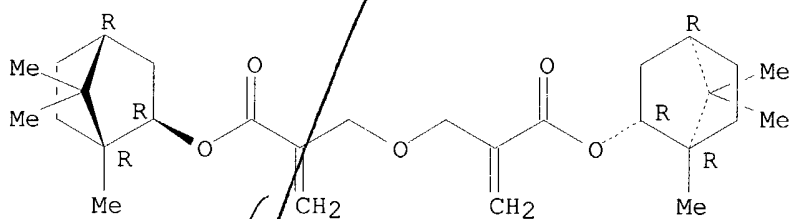
CRN 282118-21-2  
 CMF C16 H26 O7



CM 2

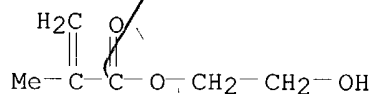
CRN 157646-99-6  
 CMF C28 H42 O5

Relative stereochemistry.



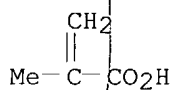
CM 3

CRN 868-77-9  
 CMF C6 H10 O3



CM 4

CRN 79-41-4  
 CMF C4 H6 O2



L106 ANSWER 41 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:452506 HCAPLUS

DN 133:81572

TI Cycloolefin ester, polymer of the cycloolefin ester, manufacture of the polymer, photoresist containing the polymer, and **patterning** using the photoresist

IN Watanabe, Takeshi; Kaneo, Takeshi; Nishi, Tsunehiro; Nakajima, Atsuo; Hasegawa, Koji; Hatakeyama, Jun

PA Shin-Etsu Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 50 pp.

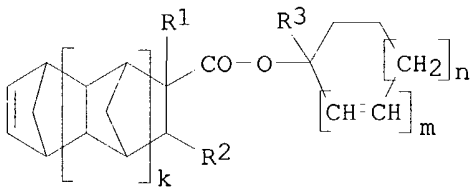
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000186118	A2	20000704	JP 1999-128044	19990510
	TW 457277	B	20011001	TW 1999-88107492	19990507
	US 6147249	A	20001114	US 1999-307767	19990510
	US <del>6444396</del>	B1	20020903	US 2000-630810	20000802
PRAI	JP 1998-145080	A	19980511		
	JP 1998-292575	A	19981014		
GI	US 1999-307767	A3	19990510		



AB The cycloolefin ester is that represented as I [R1 = H, Me, CH<sub>2</sub>CO<sub>2</sub>R<sub>4</sub>; R2 = H, Me, CO<sub>2</sub>R<sub>4</sub>; R3 = C1-8 linear, branched, or cyclic alkyl, C6-20 (substituted) aryl; R4 = C1-15 linear, branched, cyclic alkyl; k, m = 0, 1; n = 0-3; 2m + n = 2, 3]. The polymer is that having structural repeating units (SRU) corresponding to ring-opening polymerization or addition polymerization of I optionally associated with **vinyl** polymer-type and maleimide-type SRUs. The polymer is prepared from I and other C:C-containing monomers by radical polymerization, anionic polymerization, or coordination polymerization. The photoresist containing the polymer, optionally associated with an agent releasing

acid under high energy beam or electron beam irradiation, is applied on a substrate, exposed through a photomask to high energy beam or electron beam, and developed to give a **pattern**. The development may be preceded by heating. The photoresist, having the ester as an acid-decomposable group for blocking alkali-soluble portion, provides a **pattern** with rectangular cross section.

IC ICM C08F032-00

ICS C07C069-753; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38



ST cycloolefin ester polymer photoresist **pattern**; rectangular cross section **pattern** polycycloolefin photoresist; acid decomposable blocking group ester photoresist  
 IT Electron beam resists

**Photoresists**

(cycloolefin polymer with ester group as acid-decomposable blocking group for photoresist)

IT 279243-86-6P 279243-87-7P 279243-88-8P 279243-89-9P 279243-90-2P  
 279243-91-3P 279243-93-5P 279243-95-7P 279243-97-9P 279243-99-1P  
 279244-02-9P 279244-05-2P 279244-08-5P 279244-10-9P 279244-12-1P  
 279244-14-3P 279244-15-4P 279244-17-6P 279244-19-8P 279244-20-1P  
 279244-21-2P 279244-22-3P 279244-23-4P **279244-25-6P**  
 279244-26-7P 279244-27-8P 279244-28-9P 279244-29-0P 279244-30-3P  
 279244-31-4P 279244-33-6P 279244-36-9P **279244-38-1P**  
**279244-40-5P** 279244-44-9P 279244-47-2P 279244-49-4P  
 279244-52-9P 279244-54-1P 279244-56-3P 279244-58-5P 279244-59-6P  
 279244-60-9P 279244-61-0P 279244-62-1P 279249-05-7P 279250-00-9P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(cycloolefin polymer with ester group as acid-decomposable blocking group for **photoresist**)

IT **279244-25-6P 279244-38-1P 279244-40-5P**

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(cycloolefin polymer with ester group as acid-decomposable blocking group for **photoresist**)

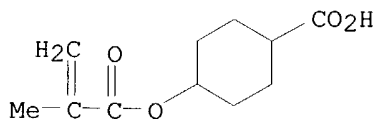
RN 279244-25-6 HCAPLUS

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-ethyl-2-cyclopenten-1-yl ester, polymer with 2,5-furandione and 4-[(2-methyl-1-oxo-2-propenyl)oxy]cyclohexanecarboxylic acid (9CI) (CA INDEX NAME)

CM 1

CRN 279244-24-5

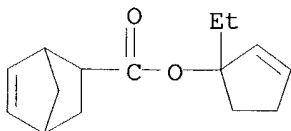
CMF C11 H16 O4



CM 2

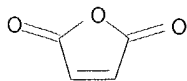
CRN 279243-71-9

CMF C15 H20 O2



CM 3

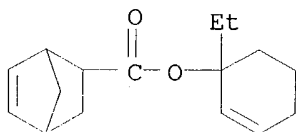
CRN 108-31-6  
CMF C4 H2 O3



RN 279244-38-1 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-ethyl-2-cyclohexen-1-yl ester, polymer with 2,5-furandione and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

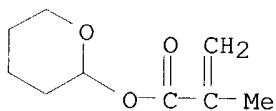
CM 1

CRN 279243-73-1  
CMF C16 H22 O2



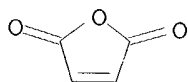
CM 2

CRN 52858-59-0  
CMF C9 H14 O3



CM 3

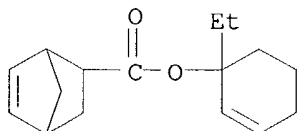
CRN 108-31-6  
CMF C4 H2 O3



RN 279244-40-5 HCAPLUS  
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-ethyl-2-cyclohexen-1-yl ester, polymer with 1-ethoxyethyl 2-methyl-2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

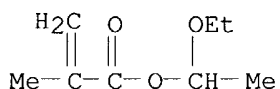
CM 1

CRN 279243-73-1  
CMF C16 H22 O2



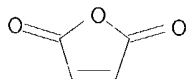
CM 2

CRN 51920-52-6  
CMF C8 H14 O3



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L106 ANSWER 42 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:713527 HCAPLUS

DN 131:329897

TI Negative-working resist composition and resist **pattern** formation using same

IN Nozaki, Koji; Yano, Akira

PA Fujitsu Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11311860	A2	19991109	JP 1998-119385	19980428
	DE 19912047	A1	19991125	DE 1999-19912047	19990317
	US 6027856	A	20000222	US 1999-272400	19990319
	TW 422942	B	20010221	TW 1999-88104428	19990320
PRAI	JP 1998-119385	A	19980428		

OS MARPAT 131:329897

AB The title resist composition developable with basic aqueous solns. contains  
(a) an

alkali-soluble group-containing film-forming polymer soluble in basic aqueous solns.,

(b) a compound having an **allyl** alc. structure, and (c) a photoacid generator which acts such that the **allyl** alc. compound is decomposed by absorbing the radiation upon exposure to become a protective group for the alkali-soluble group. and though the composition is soluble in basic aqueous solns.,

the exposed portions are insol. in alkali after exposure. The composition is coated on a substrate, selectively radiated with radiation which induces the decomposition of the photoacid generator, and developed with a basic aqueous

solution to form a resist **pattern**. The composition developable with basic aqueous solns. shows high photosensitivity and provides a high resolution resist **pattern** without swelling.

IC ICM G03F007-038

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

ST neg photoresist acid generator; **allyl** alc neg photoresist; alkali soluble resin neg photoresist

IT Negative **photoresists**

(neg.-working photoresist containing alkali-soluble resin, **allyl** alc. compound, and acid generator)

IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate

RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; neg.-working photoresist containing alkali-soluble resin, **allyl** alc. compound, and acid generator)

IT 204701-06-4P 249504-26-5P **249504-27-6P 249504-28-7P**  
249504-29-8P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(neg.-working **photoresist** containing alkali-soluble resin, **allyl** alc. compound, and acid generator)

IT 106-24-1 470-99-5, 3,5,5-Trimethyl-2-cyclohexenol 1845-30-3, Cis-Verbenol 21378-21-2, 3-Methyl-2-cyclohexen-1-ol

RL: TEM (Technical or engineered material use); USES (Uses)

(neg.-working photoresist containing alkali-soluble resin, **allyl** alc. compound, and acid generator)

IT **249504-27-6P 249504-28-7P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(neg.-working **photoresist** containing alkali-soluble resin, **allyl** alc. compound, and acid generator)

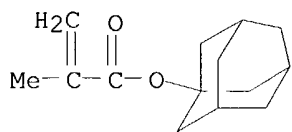
RN 249504-27-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with dihydro-3-methylene-2,5-furandione and tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl 2-methyl-2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 16887-36-8

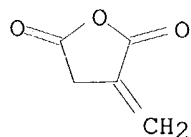
CMF C14 H20 O2



CM 2

CRN 2170-03-8

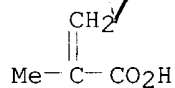
CMF C5 H4 O3



CM 3

CRN 79-41-4

CMF C4 H6 O2



RN 249504-28-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, cyclohexyl ester, polymer with ethenylphenol and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 31257-96-2

CMF C8 H8 O

CCI IDS



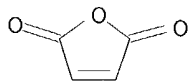
D1-OH

D1-CH=CH2

CM 2

CRN 108-31-6

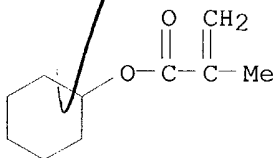
CMF C4 H2 O3



CM 3

CRN 101-43-9

CMF C10 H16 O2



L106 ANSWER 43 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:627440 HCAPLUS

DN 129:267951

TI Radiation-sensitive resin composition useful as chemically amplified resist

IN Suwa, Mitsufumi; Iwasawa, Haruo; Kajita, Toru; Iwanaga, Shinichiro

PA JSR Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10254139	A2	19980925	JP 1997-74717	19970312
PRAI	JP 1997-74717		19970312		

AB The title composition contains (a) a resin insol. or slightly soluble in alkalis,

which has an alicyclic skeleton in its main and/or side chain and becomes alkali-soluble upon cleavage of its substituents in contacting with acids, (b) a radiation-sensitive acid-generating agent, and (c) a solvent of a mixture of a linear ketone and  $\geq 1$  selected from cyclic ketones, propylene glycol monoalkyl ether acetates, and alkyl 2-hydroxypropionates. The composition shows high transparency toward radiation (so that the beam reaches deep inside the resist layer), dry etching resistance, and uniformity in film thickness and provides high resolution patterns with good adhesion to substrate.

IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Photoresists

Transparency

(radiation-sensitive chemical amplified resist with improved radiation transparency)

IT 5292-43-3DP, tert-Butyl  $\alpha$ -bromoacetate, reaction products with hexene-methylmethoxycarbonylbicycloheptene-methylmethoxycarbonyltetracyclopentene copolymer 131193-24-3DP, hydrogenated, hydrolyzed, reaction products with tert-Bu bromoacetate 213595-63-2DP, hydrogenated, hydrolyzed **213595-65-4P**

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(in radiation-sensitive chemical amplified **resist** with improved radiation transparency)

IT 97-64-3, Ethyl 2-hydroxypropionate 108-94-1, Cyclohexanone, uses 110-43-0, 2-Heptanone 98516-30-4, Propylene glycol monoethyl **ether** acetate

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; in radiation-sensitive chemical amplified resist with improved radiation transparency)

IT **213595-65-4P**

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(in radiation-sensitive chemical amplified **resist** with improved radiation transparency)

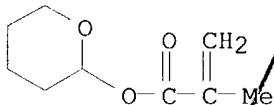
RN 213595-65-4 HCAPLUS

CN 2-Propenoic acid, 2-(hydroxymethyl)-, ethyl ester, polymer with octahydro-4,7-methano-1H-inden-5-yl 2-propenoate and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

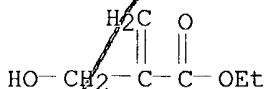
CMF C9 H14 O3



CM 2

CRN 10029-04-6

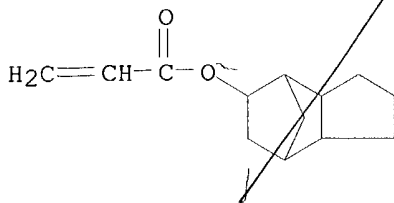
CMF C6 H10 O3



CM 3

CRN 7398-56-3

CMF C13 H18 O2



L106 ANSWER 44 OF 44 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:47856 HCAPLUS

DN 128:174154

TI Resist **patterning** capable of dry development

IN Shita, Naomi; Gokochi, Toru; Asakawa, Koji; Nakase, Atsushi

PA Toshiba Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10010752	A2	19980116	JP 1996-167810	19960627
PRAI	JP 1996-167810		19960627		

AB The title process comprises the steps of forming a resist film made of a photosensitive composition containing an aliphatic compound or a compound having a

terpenoid or alicyclic skeleton on a substrate, **patternwise** exposing the film, subjecting the exposed film to silylation, and dry-developing the treated film. This process useful in production of high d. semiconductor devices is developable with O plasma and high resolution **patterns** are obtained. Thus, a photosensitive composition containing menthyl acrylate-glycidyl methacrylate copolymer and  $\text{Ph}_3\text{S}^+\text{CF}_3\text{SO}_3^-$  was coated on a wafer, pre-baked, **patternwise** exposed using an ArF excimer laser, treated with hexamethyldisilazane vapor, and then subjected to O plasma etching to form a high resolution neg. **pattern**.

IC ICM G03F007-36

ICS G03F007-038; G03F007-039; G03F007-38; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST silylation photoresist **patterning** dry etching; terpenoid acrylate polymer photoresist; alicyclic acrylate polymer photoresist; aliph acrylate polymer photoresist

IT **Photoresists**

(photoresist **patterning** containing silylation process before dry development)

IT 202864-26-4P, Glycidyl methacrylate-menthyl methacrylate copolymer  
202864-27-5P, **Allyl** methacrylate-menthyl methacrylate copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(photoresist **patterning** containing silylation process before dry development)

IT 999-97-3, Hexamethyldisilazane 101063-55-2, Cyclohexyl acrylate-glycidyl methacrylate copolymer 172920-09-1, Glycidyl methacrylate-isobornyl methacrylate copolymer 174952-10-4, Glycidyl methacrylate-menthyl acrylate copolymer 174952-23-9, **Allyl** methacrylate-menthyl acrylate copolymer 202864-28-6, **Allyl** methacrylate-cyclohexyl



acrylate copolymer 202864-29-7, Adamantyl methacrylate-glycidyl  
methacrylate copolymer 202864-30-0, Adamantyl acrylate-**allyl**  
methacrylate copolymer 202864-31-1, **Allyl** methacrylate-  
isobornyl acrylate copolymer 202864-32-2, Menthyl methacrylate-  
trifluoromethyl methacrylate copolymer 202864-33-3, Menthyl  
methacrylate-trifluoromethyl acrylate copolymer 202864-34-4, Cyclohexyl  
acrylate-trifluoromethyl methacrylate copolymer 202864-35-5, Isobornyl  
methacrylate-trifluoromethyl methacrylate copolymer 202864-36-6,  
Adamantyl acrylate-trifluoromethyl methacrylate copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(photoresist **patterning** containing silylation process before dry  
development)

IT 202864-27-5P, **Allyl** methacrylate-menthyl methacrylate  
copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); **PREP (Preparation)**; USES (Uses)

(photoresist **patterning** containing silylation process  
before dry development)

RN 202864-27-5 HCAPLUS

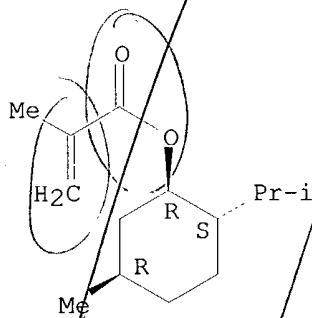
CN 2-Propenoic acid, 2-methyl-, 5-methyl-2-(1-methylethyl)cyclohexyl ester,  
(1 $\alpha$ ,2 $\beta$ ,5 $\alpha$ )-, polymer with 2-propenyl 2-methyl-2-  
propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 7372-67-0

CMF C14 H24 O2

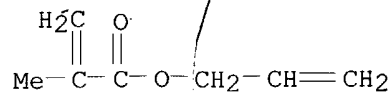
Relative stereochemistry.



CM 2

CRN 96-05-9

CMF C7 H10 O2



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